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ORIGINAL ARTICLES

TUMOR OF THE CAROTID GLAND

BY RICHARD H. MILLER, M. D., F. A. C. S. AND FREDERICK E. GARLAND, M. D.

LYING in the bifurcation of the common carotid artery on each side, is a small body, about 5x3x2.5 mm in its various dimensions, of doubtful origin, of unknown function, and occasionally giving rise to a definite tumor formation. This is the so-called "carotid gland" or "carotid body." It is oval in shape, reddish-brown in color, and is closely connected with the sympathetic nerve fibres which surround the carotid vessels. Luschka[1] in 1862, described it as being rich in vessels, nerve fibres, and ganglion cells, an adjunct to the cervical sympathetic. He considered it an especial sort of gland, a "nerve gland" and he thought it might have its anlage in the parathyroid. Arnold[2] in 1865, felt that it was an organ related to the circulatory system, with a glomerular arrangement of its parts, and especially rich in blood vessels. There arose a controversy between Luschka's pupils, emphasizing the epithelial nature of the gland, and those of Arnold, who asserted its vascular origin and connections. Later Heppner[3] declared it to be really a part of the thyroid. Stieda[4] in 1881, claimed that it arose from a branchial cleft. This theory received much support, but later failed of confirmation.

Stilling found chromaffin cells in the gland, in animals, and considered it to be allied in some way to the adrenal body. Kohn[5] as a result of his studies, felt that it was in the nature of a ganglion, in intimate relation with the nervous system. He called it the "paraganglion intercaroticum," and was convinced of its developmental relation to the whole chromaffine system. He believed that all the chromaffin containing bodies, even the suprarenal, developed from the sympathetic system, and his ideas are largely accepted today. Poll[7] says that chromaffin cells and sympathetic cells all come from a common ancestor, the "sympathogonie." Monckeberg[6] as well as Stilling (v.s.) noted the different chemical reaction of the cells to chromic salts. For a long time most observers agreed with Stieda[4] that it arose from a branchial cleft—then Marchand and others emphasized what they considered its vascular origin.

As thought by Katschenko[9], the gland probably arises from a thickened portion of the adventitia of the internal carotid artery near the bifurcation of the common carotid.

To quote Keen and Funke[8] . . . "while most authors now regard the carotid gland as largely a vascular structure and that the cells of the organ are in some way intimately related to the capillaries, recent experiments indicate the correctness of the view expressed by Luschka that the carotid gland is analogous to the coccygeal, the suprarenal gland and the hypophysis cerebri. Because of the organ's close proximity to the cervical ganglia and because of the presence of many nerve fibres in the gland, Luschka regards it as a nervous structure. Paltauf suggests that later we may recognize a close relationship between the nervous system and the gland."

NORMAL STRUCTURE

The gland is composed of masses of large polyhedral epithelioid cells, separated from each other by strands of connective tissue. Wide tortuous capillaries with thin walls lie in intimate contact with these cells. Chromaffin cells are present.

FUNCTION

"It has not yet been proved that the carotid gland has a specific function peculiar to itself. It is a small link in the whole adrenal or chromaffin system, and has the function of that system—regulation of blood pressure and carbohydrate metabolism."[10] Mulon made an extract of the carotid gland of horses, and this when injected into guinea pigs caused rise of blood pressure and at times an increase in rate and force of heart beat. Gomez injected a glycerine extract of the gland in cats and caused a fall in blood pressure. We may close this paragraph by saying that the function is clinically unimportant.

TUMOR FORMATION

Rarely this gland is the seat of new-growth. Schmidt[10] in 1922, collected fifty cases; Keen and Funke in 1906 found record of only twenty-nine cases. Callison and McKenty[11] in 1913, could find sixty cases. The author of this paper easily found record of seventy-five cases—these are not given in detail, because numerous other reports have been made covering them, and to give them again would entail needless repetition; furthermore, there are doubtless several other cases which might be overlooked. Schmidt[10] noted that in all the cases which he reviewed the tumor was rich in vessels, of alveolar arrangement, in which the alveoli were filled with epithelioid cells, polygonal in shape, with abundant protoplasm. No definite arrangement was noted in the groups of cells, but they were in close relation to the capillaries. He states that most authors did not record the presence of chromaffin cells, because they did not know how to look for them. Of these fifty cases, only two were diagnosed correctly. Keen and Funke[8] describe their case as having a fibrous capsule, with strands of elastic tissue and lymphoid elements; also cell-like structures, 10-20 microns in diameter, tinged yellow-brown, "perhaps identical with the chromaffin cells described by Kohn." The tumor cells were in alveolar arrangement ("the German 'Zellballen' ") around the vessels. Scudder's case[12] on microscopic examination "showed the growth to be traversed by a series of large thick-walled vessels, evidently arteries. Between these large vessels lay the proper tumor tissue, which was composed of large, round and spindle cells, with but little appearance of intercellular substance, and traversing it in all directions were blood channels, in many cases lined with but a single layer of endothelial cells." The best description of the tumor is to be found in Ewing's book on Neoplastic Disease, and it seems wise to quote his work as follows:

"The chief cells are distinctly polyhedral, granular, and many contain chromaffin substance. They are arranged in compact groups without lumen, but surrounded by hyperplastic endothelium lining the numerous capillaries. Much larger cell groups are often observed, the central portions of which are prone to degenerate and form cavities in which blood may be found. Definite capillaries may also traverse the cell groups (Monckeberg). Hyaline degeneration of the cells gives rise to intracellular globules, and affecting the stroma produces peculiar knobs projecting into the capillaries (Kaufmann). The numerous vessels may produce a cavernous tissue or they may be much reduced in hard tumors. They are lined by prominent endothelial cells which sometimes grow out into the vessels in syncytial buds, or mingle with the chief cells of the tumor, producing complex pictures. The stroma may be scanty and acellular or hyaline, or infiltrated with tumor-cells, and Leithoff describes a case in which he regarded the stroma as sarcomatous."

SYMPTOMS

The tumor ordinarily begins in adult life, between the extremes of youth and age, as a painless, slow growing swelling, under the sternomastoid, at the level of the bifurcation of the common carotid. It is usually hard, encapsulated, and not freely movable. It is very difficult to differentiate from tuberculous glands, which are ordinarily just behind and on a level with, or slightly below, the angle of the jaw. The growth is usually slow and relatively benign for a long time, assuming rapid growth and malignant characteristics only in its later stages. Keen's case was of 18 years duration, Scudder's 9 years, and all of Monckeberg's[6] were of "slow growth." Heinleth reported a case of 30 years duration. Remote metastases have rarely been observed, though Schmidt noted 3 recurrences after 45 operations; Keen reports 4 recurrences from the literature; Monckeberg reports in 12 cases 2 local recurrences and 2 cases with glandular involvement (metastatic). Callison and McKenty noted among 60 collected cases, 6 recurrences, and one with metastasis in the liver. Da Costa[13] reports one case with tumors on both sides of the neck, each about the size of a hen's egg. It is generally accepted that early operation is imperative; that is, operation while the tumor is relatively benign, and before it has begun to show malignant characteristics.

OPERATIVE DIFFICULTIES

The growth commonly involves both carotid arteries, and frequently the vagus and cervical sympathetic nerves are so intimately bound up in the tumor that they necessarily have to be sacrificed in its removal. In the 50 cases collected by Schmidt, 45 had operations, 28 were cured, 14 died, 3 had recurrence. Both vagus and sympathetic were cut three times, and the vagus alone three times. In most of the cases both carotids were tied—in three only the external carotid was tied; of the 14 deaths, 2 had broncho-pneumonia following section of the vagus, 2 died of haemorrhage, 4 had hemiplegia (evidently from tying the internal carotids), one died of sepsis, and 5 of various other causes.

Keen and Funke collected 26 operative cases with 7 deaths (27%). Both external and internal carotids were ligated in 18 cases. They emphasize the danger of pulmonary involvement after cutting the vagus, and that of cerebral damage after tying the internal carotid. They report the following distressing sequelae:

Hemiplegia with aphasia—three cases
Affected voice—three cases
Constant cough—one case
Paralysis of hypoglossal—four cases
Altered pupil—two cases
Exophthalmos—one case

They collected from the literature 138 cases of ligation of the common carotid with a mortality of 24.7%.

Callison and McKenty reviewed 54 operations, in which the common carotid was tied in 32, the external carotid alone in 7. They noted hemiplegia in 4. Reclus and Chevassu (quoted in [8]), say "Every operation undertaken for tumor of the carotid body may require resection of the vessels and nerves of the neck. Interference should be undertaken, therefore, only when serious functional troubles, or a rapid evolution of an apparently malignant character, are present, thus justifying an attempt, the consequence of which may be very grave."

REPORT OF CASE

A well developed and nourished woman of 35 was referred to the author in March 1923.

The family history was not important.

The past history was essentially negative.

The tonsils and adenoids had been removed some years previously. There was no history of any serious illness or injury.

Four years previously, following an attack of influenza, she had noticed a small lump in the left side of the neck. This had persisted ever since, growing slightly larger all the time. There had been no pain to speak of. There were really no symptoms, and the patient wanted the tumor removed simply for cosmetic reasons.

Physical examination showed a robust healthy woman. The teeth were sound, mouth negative. On the left side there was a small tab of tonsil at the bottom of the tonsillar fossa—it showed no macroscopic evidence of disease.

On the left side of the neck, behind and below the angle of the jaw, lying deep in the carotid triangle, was a smooth hard, non-tender, non-fluctuating mass, extending from about the bifurcation of the common carotid artery, well up toward the base of the skull, behind the sterno-mastoid msucle. This was slightly movable, and seemed harder than the ordinary tuberculous gland.

The heart and lungs were negative.

The abdomen was negative.

No other enlarged lymphatic glands were made out.

Urine was negative.

Blood smear—normal.

The diagnosis was considered to be tuberculosis of the cervical glands, and it was decided to remove the glands and at the same time the small bit of remaining tonsil.

Operation, March 12, 1923. A curved incision was made in the crease of the neck on the left side, overlying the tumor. The platysma was cut through. The sterno-mastoid was retracted laterally. The tumor was then exposed, lying on the carotid sheath, underneath and partly medial to the sterno-mastoid. Running across the upper part of the tumor was the hypoglossal nerve, which was carefully retracted upward. It then turned out that the most superficial part of the tumor consisted of two lymph glands, lying on the main growth; these were removed by themselves. The tumor was then found to be very hard, adherent, elliptical, and extending well upward toward the base of the skull. Its lower extremity was just above the bifurcation of the common carotid artery, and the external carotid was seen running directly into it. At first an attempt was made to dissect the growth off the artery, but in doing this the vessel tore and for a moment there was considerable haemorrhage, which was immediately stopped as a provisional ligature had been placed about the artery below the tumor, and this was at once tied. The vessel was tied again, then cut, and the tumor was thereafter dissected out with comparative ease, being removed in its entirety, together with a portion of the artery. After removal the internal carotid could be identified, pulsating normally. No nerves save superficial skin branches were cut. All vessels were tied, the platysma was sutured with fine cat-gut and the skin with horse-hair. One small rubber wick was placed in the wound. Following this the remaining tonsillar tissue was removed by Doctor Garland.

Post-operative recovery was essentially uneventful. There was slight temporary paralysis of the left side of the tongue, due to bruising of the hypoglossal nerve, but this disappeared in a few days.

As a prophylactic measure, two X-ray treatments were given.

Seen in May 1924—excellent result, no evidence of recurrence.

Pathological report, Dr. F. Hartwell.

"An oval, encapsulated tumor about the size of a golf-ball, measuring 2.5x2.5x4 cm. A section of a large artery 3 cm. long runs through one pole. On section the tumor has a firm, reddish-gray surface. A soft lymph-node 2.5 cm. in greatest diameter is in a separate package.

Microscopic examination shows polyhedral granular cells arranged in compact groups of various sizes without lumens. These cell groups are in close relation to thin-walled blood-spaces whose endothelium is hyperplastic. There is a fairly abundant cellular, fibrous stroma in which the dilated blood-spaces produce a cavernous structure. Hyaline degenerated knobs, often containing hemorrhage and wandering cells, project into some of the capillaries.

The gross and microscopic appearances are characteristic of a neoplasm of the carotid body.

A microscopic section of the large lymph-node shows hyperplasia. There is no evidence of metastasis.

Diagnosis: Perithelioma."

DISCUSSION OF CASE

This was a typical carotid tumor, though of unusual type because it involved only the external carotid artery, instead of the internal, or both. Its hardness should have made us suspicious that it was not tuberculosis. At operation the placing of a provisional ligature about the artery, ready to be tied at an instant's notice, was a procedure of great value. The post-operative radiation may or may not have been necessary, but certainly gave one an added sense of safety as regards the future.

CONCLUSIONS

1. A case is reported of perithelioma of the carotid gland, and the literature is briefly reviewed.
2. This tumor is very rare. It is benign in its early stages, becoming malignant after some years of growth.
3. If seen early, operation is indicated, though it must be approached with great care; and the prognosis as to complications and sequelae must be guarded.
4. If seen late, operative difficulties are extremely great, and the line of treatment must be determined by the circumstances of the individual case.

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ENDOTHERMY, THE NEW SURGERY, AS APPLIED TO ACCESSIBLE EPIDERMOID CARCINOMA

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ANY intelligent discussion of the relative merits of different methods of treating malignancy must take cognizance of the fact that neoplasms are of many forms and of varying manifestations. To generalize is, therefore, a waste of time. We must be definite in diagnosis and informed as to the value of more than one means of combatting the progress of the lesion. But there is one general statement which may be made without challenge. No one will deny that it is better to remove a neoplastic growth as a mass of dead cells than to remove it as a mass of living cells. We may say, therefore, that destruction and removal is better than removal and destruction.

Endothermy, the production of heat in the tissues from within, is the method by which this better result is obtained, and as it is mainly applicable only to those lesions which are accessible, or to those lesions in body cavities which may be made accessible, the user of endothermy is able to become highly specialized in its employment.

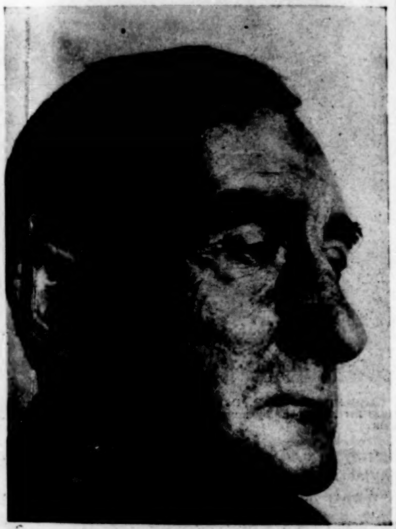
In these accessible lesions Endothermy has this advantage over physical measures (radium and X-ray) that its results are achieved promptly. Both patient and operator are spared those time-consuming tissue conversions which make the outcome with other methods so long uncertain and so often disappointing.

I would like to discuss today a variety of cases of malignancy and show just why in each instance Endothermy was the method of choice and just how its use was justified by the outcome. It will perhaps be clearer to the reader if in place of a general statement of method we give in detail the course followed in each individual case.

Case I is that of a prickle-cell epithelioma of right-side of nose, the pre-operative diagnosis having been confirmed by the pathological findings, illustrated in Fig. 3. The patient, W. B., 61, reported the growth was of only six weeks duration.

Because the lesion was not large in area and did not extend to great depth in the tissues it was decided to employ monopolar endothermy in its removal, and to do the work under local anaesthesia, ½% novocaine.

The current from an Oudin resonator of the machine, that is to say, a current of high voltage and low amperage, was turned on and, operating through an ordinary sewing needle held in a suitable handle, a light ring of destruction was described in healthy tissue around the malignancy. A specimen for the microscope was now taken with impunity. The growth itself was next attacked by this monopolar, dehydrating current and destroyed in situ. It was then curetted away, the clean base seared over with a brushing of the current, and a simple dressing applied.



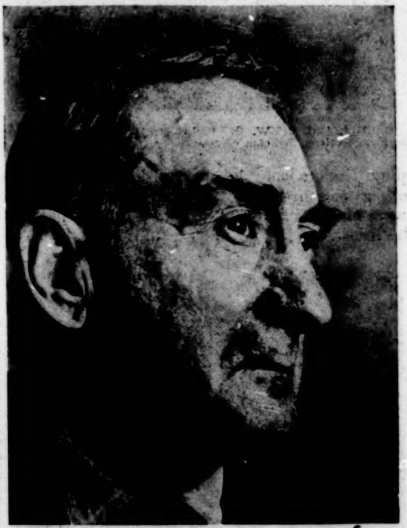
CASE I, FIG. 1. Prickle-cell epithelioma of right side of nose, one and one-half months' duration, removed by monopolar endothermy in a single treatment under local anesthesia.

Fig. 2, from a photograph after the lesion had healed, shows the excellent cosmetic result achieved. No recurrence in two years. The operation was bloodless, it required only about ten minutes of time, and there was no pain either during the operation or afterward.

Case II is of another rapid-growing, prickle-cell epithelioma, this time of the lower lip. The patient, D. D., 57, was admitted to Vanderbilt Clinic where, under local anaesthesia, the malignant area was treated by the same current, and the same technique as described in Case I. The protective wall of destruction necrosis was carried entirely through the lip tissue. The purpose of this wall, it cannot too often be said, is to sear off lymphatics and blood vessels to and from the affected part and thus reduce the dangers of metastasis and likelihood of recurrence. Sensory nerves are at the same time cut, a result thus incident to the method being a cessation of pain.

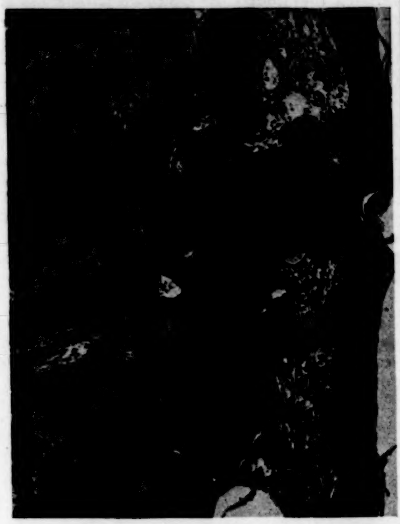
The protection wall of necrosis drawn and the lesion dehydrated to its depth, the scissors were employed to excise the dead tissue. This was two years ago and there was at that time no other way to excise but by the scissors or the scalpel. Since then, however, the Endotherm has been devised and perfected and we now, by turning a switch on the machine, bring into use the extremely high frequency current which operates through the Endotherm knife. The current is the knife, in fact, as it provides the molecular dissolution which is the incision by working through the same steel needle which is the applicator for both bipolar and monopolar endothermy as well. This current, searing as it cuts, gives yet further protection against mechanical dissemination. The epitheliomatous tissue is excised as a mass of dead cells. Post-operative care is very simple. The patient is free from pain, there has been no hemorrhage and no surgical shock. Nature sets to work to restore with healthy tissue the excised malignancy, and Fig. 2 shows an excellent result. In Fig. 3 is given the pathological section showing the cell formation and arrangement.

Case III, Fig 1, illustrates a prickle-cell epithelioma of lower lip recurrent only three weeks after V-shaped excision by the surgeon's knife. A rapid-growing nodule had appeared in the center of the scar. This was removed by monopolar endothermy, following its isolation by a surrounding necrosis line. Fig. 2 shows the appearance of the lip two days after the single treatment which was necessary while in Fig. 3 we see the lesion entirely healed. There

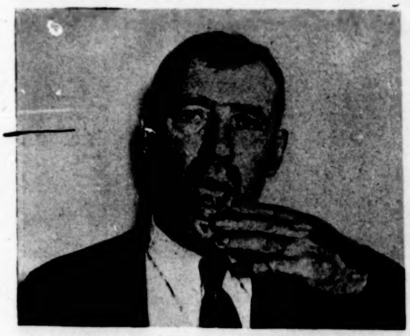


CASE I, FIG. 2. W. B. Lesion completely healed with good cosmetic result. No recurrence in two years.

has been no recurrence in one and a half years. The whorl and pearl formation of the excised nodule is illustrated in the pathological section, Fig. 4. Although it is always desirable to employ Endothermy in such cases before trying other measures the results in this instance were highly gratifying despite the time that had been lost.

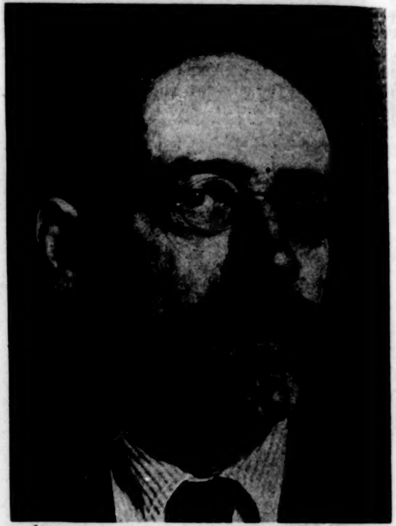


CASE I, FIG. 3. W. B. Pathological section of squamous or prickle-cell epithelioma of nose.



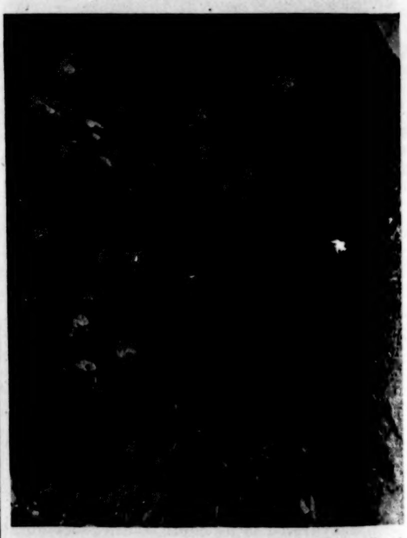
CASE II, FIG. 1. D. D., 57. Epithelioma lower lip. One-half year's duration.

Case IV. P. S., 65, Prickle-cell epithelioma of hand, of 2 months' duration. Removed by endothermy in a single treatment after which a prophylactic dose of X-ray was given.

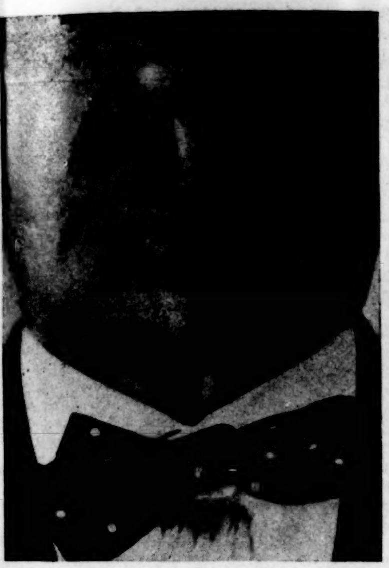


CASE II, FIG. 2. D. D. Epithelioma of lower lip over two years after removal by monopolar endothermy in a single treatment.

We are not infrequently told by surgeons more

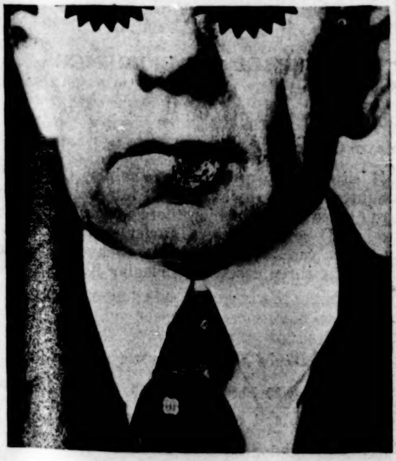


CASE II, FIG. 3. D. D. Micro-photograph prickle-cell epithelioma of lower lip.



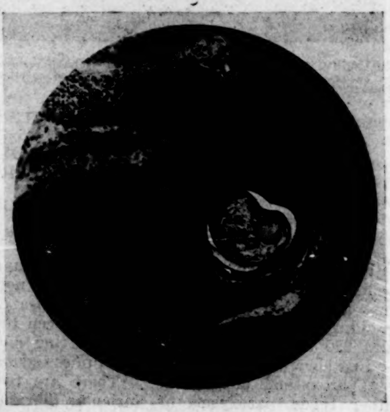
CASE III, FIG. 1. Prickle-cell epithelioma of lower lip recurrent three weeks after V-shaped excision by surgeon's knife. Note nodule in center of scar.

or less experienced in the treatment of prickle-cell epitheliomas of the extremities that the only wise course is amputation of the member involved. Endothermy is showing us that amputation is seldom necessary unless, indeed, there has been prolonged neglect of the lesion.



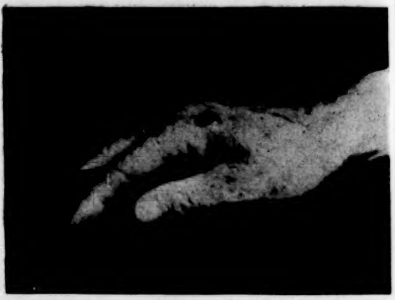
CASE III, FIG. 2. Two days after destruction and removal by monopolar endothermy. May 2, 1923.

CASE III, FIG. 3. Lesion healed. No recurrence to date.

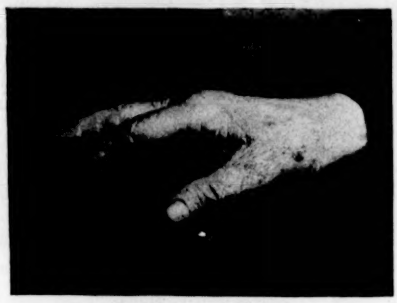


CASE III, FIG. 4. Micro-photograph of recurrent epidermoid carcinoma of lower lip.

Endothermy works as effectively in the destruction and removal of these highly malignant growths as in the destruction and removal of the more mild basal-cell epitheliomas, provided metastasis has not yet taken place. The pictures accompanying these paragraphs illustrate a result which is usual with this method. A summary of the treatment of this case may be given as an outline of the definite, specific technique by which these results are achieved.



CASE IV, FIG. 1. P. S., 65. Prickle-cell epithelioma of hand, two months' duration.



CASE IV, FIG. 2. Prickle-cell epithelioma of hand removed by one treatment of monopolar endothermy. Note excellent cosmetic result.

CASE IV, FIG. 3. P. S., 65. Pathological section, prickle-cell epithelioma of hand.

There was, first, the complete isolation of the malignancy from the healthy tissue by the dehydrating needle of monopolar endothermy; next the destruction of the mass itself by the same needle and the same current; and, finally, its removal, inert as a piece of wood. Patient's recovery was rapid, the cosmetic result good, and patient has continued in perfect health to this date.

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PARAXYSMAL TACHYCARDIA WITH SPECIAL REFERENCE TO PROGNOSIS

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PAROXYSMAL TACHYCARDIA may be defined as a condition in which, from time to time, the normal mechanism is interrupted by a series of rapid, regular beats varying in rate between 100 and 220 each minute, the series starting and ending abruptly. This definition applies to simple paroxysmal tachycardia. There are two other types, paroxysms of auricular fibrillation and auricular flutter. Paroxysmal auricular fibrillation will not be discussed in this paper.

During the years 1914 to 1923, 102 cases of paroxysmal tachycardia were seen in the cardiac service of the Mayo Clinic, in which electrocardiographic tracings were obtained during the attacks. The cases were divided into groups as follows: (1) thirty-six cases of nodal tachycardia, which were subdivided into five cases in which the P-R interval was diminished, twenty-eight cases in which the P-R interval was zero, and three cases in which there was an R-P interval; (2) seven cases of auricular tachycardia; (3) six cases of ventricular tachycardia, and (4) fifty-three cases of auricular flutter.

TABLE 1

INCIDENCE ACCORDING TO SEX AND AGE

Decade	20-29	30-39	40-49	50-59	60-69	70-79	Total
Males	6	8	11	23	10	2	60
Females	3	8	12	17	2	0	42
Total	9	16	23	40	12	2	102

The incidence of cases according to sex and decades is shown in Table 1; sixty (59 per cent) of the patients were males, and forty-two (41 per cent) were females. There were more patients of both sexes in the sixth decade of life; seventy-five were between the ages of forty-one and seventy inclusive.

In cases in which previous infectious diseases had existed, with possible damage to the heart, a history of tonsillitis was obtained in thirty-nine, influenza or "grippe" in thirty-eight, rheumatic fever in nineteen, typhoid fever in seventeen, scarlet fever in thirteen, pneumonia in twelve, diphtheria in four, and chronic rheumatism in two. In twenty cases no history of previous infections could be obtained.

The type of associated general diseases in this group is noteworthy. There were forty-four cases without associated diseases, fourteen with arteriosclerosis, thirteen with hypertension, sixteen with exophthalmic goitèr, six with adenomatous goiter with hyperthyroidism, five with syphilis, three with chronic nephritis, two with duodenal ulcer, and one case each with myxedema, Addison's disease, pernicious anemia, cancer of the stomach, and cancer of the esophagus.

Various cardiac disorders were encountered in this group. In twenty-seven cases no lesions were noted; in sixteen, myocardial degeneration was associated with exophthalmic goiter; in six, with adenomatous goiter with hyperthyroidism; in ten, with chronic endocarditis, and in eighteen, with various types of myocardial degeneration. The cases of aortic and coronary disease were subdivided as follows: one case each of syphilitic aortitis with aortic regurgitation, syphilitic aortitis, angina pectoris, coronary sclerosis with infarct and aneurysm of the left ventricle, diffuse dilatation of the aorta, and aortitis; twelve cases each of myocardial degeneration associated with hypertension, myocardial degeneration associated with arteriosclerosis, and three cases of pericarditis.

In nine cases of exophthalmic goiter, in which basal metabolic rate determinations were obtained, the average rate was + 51 per cent (Dubois standard). In five cases of adenomatous goiter with hyperthyroidism the average rate was + 30 per cent.

The clinical picture of paroxysmal tachycardia is well known and needs no detailed discussion, the most important characteristic being its sudden onset and abrupt cessation.

One of the most common symptoms was vertigo, which was associated with the attacks in eighteen cases. Of the patients complaining of vertigo, fifteen were males and three were females. Eleven of the patients were more than forty-nine years of age, and the incidence of arteriosclerosis and hypertension was high. This strongly indicates that pathologic processes, in the vascular supply to the brain, determine, to a large extent, the occurrence of vertigo in attacks of paroxysmal tachycardia. One patient in this group illustrates well the importance of this symptom. A man, aged sixty-two years, had had attacks of vertigo for the last four years. He admitted, only after the most direct questioning, that these attacks were attended by sudden seizures of tachycardia. On physical examination a diagnosis of syphilitic aortitis was made, and verified by a positive Wassermann reaction. No radial pulse could be obtained in the right arm, but collateral circulation was well established. There was marked peripheral arteriosclerosis. The patient was kept under observation a few days and presently severe vertigo developed. The pulse rate was 160, and an electrocardiogram identified the paroxysm as a nodal tachycardia with a P-R interval of zero and a rate of 150 each minute. If an elderly patient complains of vertigo, especially if evidences of arteriosclerosis are present, the history of attacks of paroxysmal tachycardia must be carefully excluded.

Pain is an interesting, if infrequent, symptom of paroxysmal tachycardia. Nine patients in the series had pain, which was located in various regions; in one instance, retrosternal with interscapular and abdominal radiation, at times precordial, and again in the interscapular region only. In one instance the pain was so severe that morphin was required for its control. One patient had knife-like precordial pains repeatedly in attacks of tachycardia. Six of the patients having pain were males. Two patients had marked arteriosclerosis; one had arteriosclerosis with marked hypertension; one had hypertension alone; one had aortitis; one had coronary sclerosis, the pain being considered a true angina pectoris; and one had an area of pericardial calcification, in which "sticking" pains had been noted. It appears, therefore, that in this group of nine cases, the pain, as a symptom, was practically confined to the cases of paroxysmal tachycardia in which there were coëxisting arterisoclerotic processes affecting the blood supply of the heart.

The patients' subjective appreciation of the disturbed cardiac action caused them to mention palpitation, a fluttering sensation in the chest, and tachycardia, as important symptoms. They also complained of choking, a lump in the throat, of being weak, faint, and tired, and one patient often fell asleep toward the end of her attack. Dyspnea was a fairly common symptom. It is of interest that the past histories in this group did not indicate an instance of severe heart failure during the attacks.

Besides vertigo, there were other manifestations of cerebral anemia. Five patients had syncope during attacks; two were delirious; one had epileptiform seizures; three had spells of unconsciousness in their paroxysms, and three said that everything became black before their eyes during attacks. One patient complained of numbness and another became aphasic during a paroxysm.

In forty cases in which the date of onset was noted, the average time during which the attacks had occurred was twelve years. In three cases the attacks had recurred over a period of forty years or more, the longest period being forty-three years.

The foremost factors to which patients attributed the onset of their attacks were excitement, exertion, and the ingestion of food. They often attributed the onset of a paroxysm to overeating, or indiscretion in the type of food chosen. A group of patients felt that gastric flatulence provoked seizures. Emotionalism and sudden changes in posture were mentioned less frequently as causes. Two patients were awakened from sleep by attacks.

While the attacks varied greatly in frequency, it was a general rule that the longer they had persisted, the more frequently they occurred. The attack might at first come on several times in one year, and later occur several times in one day. One patient was subject to several attacks a day for two or three weeks, and was then free for a considerable period. Another patient had short attacks every four to six minutes during one of her seizures. The duration of attacks varied from a few minutes to days or weeks. The longest duration occurred in cases of auricular flutter.

Patients often acquired ways of terminating an attack. Vomiting was, by far, the most effective and commonly used method. They also learned to employ vagal pressure, deep breathing, belching, drinking water, and applying an ice cap to the precordium. One patient said that morphin was effective in her case as soon as it produced vomiting.

Detailed information, obtained from questionnaires sent to patients, is tabulated in Table 2. The total number of patients living is fifty-eight. Thirty-six of these report that they are still having attacks of tachycardia. Two report that they were confined to bed, one for two weeks with a paroxysm of tachycardia, and one for three months following a "stroke of apoplexy." Thirty-two patients report that they are able to do their usual amount of work, fifteen that they can do light work, and ten that they are unable to work. Seven patients are having varying degrees of orthopnea, but in no instance was it sufficient to confine them to bed. Considering the ages represented in this series, as well as the severe cardiovascular damage, it does not appear that attacks of paroxysmal tachycardia have contributed much to cardiac failure or to incapacity.

The deaths due to heart disease are grouped in Table 3. The total percentage is calculated on the basis of eighty-four patients heard from. Five deaths, due to causes not ascribable to cardiac disease, are not included. The cardiac mortality is highest in cases of auricular flutter. The mortality in males slightly exceeds that in females. This is not intended to represent a normal mortality in paroxysmal tachycardia, for, if the degrees of cardiac damage and the types of associated general diseases represented in this series are revealed, it will be realized that we are

Table 2

Results of questionnaires

Type of tachycardia	Sex	Cases	Deaths	Living patients traced	Patients able to be up	Patients confined to bed	Patients still having attacks of rapid pulse	Patients short of breath on exertion	Patients with dyspnea on one flight of stairs	Patients with dyspnea on two flights of stairs	Orthopnea	Edema of ankles	Patients still having palpitation	Patients doing usual amount of work	Patients doing light work	Patients unable to work	Average time from date of examination until traced; years.
Nodal tachycardia P-R interval diminished	Males	1	0	1	1	0	1	1	0	1	1	0	0	1	0	0	3-11/12
	Females	4	1	3	3	0	1	0	0	1	1	0	2	2	1	0	6- 1/2
Nodal tachycardia R-P interval	Males	2	0	1	1	0	0	1	1	1	0	0	1	0	1	0	7- 5/12
	Females	1	0	1	1	0	0	0	0	0	0	0	0	0	1	0	- 1/2
Nodal tachycardia P-R interval zero	Males	14	3	8	8	1*	5	3	2	3	0	0	6	6	0	1	2- 1/2
	Females	14	1	9	9	0	7	5	3	3	0	2	5	4	4	0	2-3 days
Auricular tachycardia	Males	4	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Females	3	0	1	1	0	1	1	1	1	1	0	1	0	0	1	4-11/12
Ventricular tachycardia	Males	5	2	3	3	0	3	1	0	0	0	1	2	2	0	1	3-7/12
	Females	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	3-7/12
Auricular flutter	Males	34	10	21	21	0	11	11	7	8	3	5	10	13	3	5	3-9/12
	Females	19	6	10	9	1**	7	6	5	6	1	4	7	3	5	2	2-10/12
Total	Males	60	17	34	34	1	20	17	10	13	4	6	19	22	4	7	3-7/24
	Females	42	8	25	24	1	16	13	8	11	3	6	15	10	11	3	2-0/12
Total males and females		102	25	59	58	2	36	30	18	24	7	12	34	32	15	10	3-1/4

Note: * In bed two weeks, two years ago with attack of tachycardia.
** In bed three months with "apoplexy."

dealing with a group of cases more severe than the average.

In Table 4 it may be noted that in eleven cases of endocarditis, there were five deaths (46 per cent). In the seven cases of aortic and coronary disease, there were four deaths (57 per cent). The low death rate in the cases in which hyperthyroidism was associated, furnishes a striking contrast. The death of the patient with exophthalmic goiter was due to protracted hyperthyroidism. The myocardial degeneration associated with exophthalmic goiter and adenomatous goiter with hyperthyroidism is minimal compared to that occurring in sclerotic and intrinsic, inflammatory processes in the heart, provided the hyperthyroidism is controlled by an adequate operation before the heart is irreparably damaged. Of the six deaths in cases in which there were no objective signs of cardiac lesions, four were accounted for by causes in no way attributable to cardiac disease. Eliminating these deaths, the cases are grouped into those in which there was minimal, or no objective evidence of cardiac lesions (Table 5). The death rate in this group was 10 per cent. One of the deaths was the result of an attack of paroxysmal tachycardia, and presumably, also two other deaths. In sharp contrast with the foregoing (Table 5) are the thirty-six remaining cases in which definite objective findings of cardiac lesions were present. There were fifteen cardiac deaths (41 per cent) in this group.

So far as this series is concerned, it is clearly

Table 3

Death of Cardiac Origin

	Males			Females			Per cent death		
	Number	Replies	Dead	Number	Replies	Dead	Males	Females	Total
Nodal tachycardia P-R dim	1	1	0	4	3	1	0	25	20
Nodal tachycardia R-P interval	2	1	0	1	1	0	0	0	0
Nodal tachycardia P-R zero	14	8	3	14	9	1	27	10	19
Auricular tachycardia	4	2	0	3	1	0	0	0	0
Auricular flutter	34	22	9	19	11	5	29	31	30
Ventricular tachycardia	5	4	1	1	1	0	20	0	17
Total	60	38	13	42	26	7	26	21	24

TABLE 4

DEATHS AND CASES GROUPED ACCORDING TO THE PROBABLE CAUSES OF CARDIAC DAMAGE

Diagnosis	Cases	Deaths
Exophthalmic goiter	13	1
Adenomatous goiter with hyperthyroidism	5	0
No findings of cardiac lesion	15	6
Endocarditis	11	5
Aortic sclerosis	3	2
Coronary sclerosis	2	1
Syphilitic aortitis with aortic regurgitation	1	1
Syphilitic aortitis	1	0
Cardiac degeneration, cause not determined	8	4
Flutter, only finding on cardiac examination	8	2
Hypertension without objective cardiac findings	3	0
Hypertension with objective cardiac findings	6	2
Arteriosclerosis without objective cardiac findings	4	1
Arteriosclerosis with objective cardiac findings	2	0
Chronic pericarditis	2	0
Total	84	25

TABLE 5

MINIMAL OR NO OBJECTIVE EVIDENCE OF CARDIAC LESIONS

Diagnosis	Cases	Deaths
Exophthalmic goiter	13	0
Adenomatous goiter with hyperthyroidism	5	0
Without objective evidence of cardiac disease	15	2
Auricular flutter only finding on cardiac examination	8	2
Hypertension without objective signs of cardiac lesion	3	0
Arteriosclerosis without objective signs of cardiac lesion	4	1
Total	48	5

evident that the estimation of the prognosis in paroxysmal tachycardia is very largely determined by the estimation of the type and degree of the underlying cardiac involvement.

SUMMARY

Of a group of 102 patients with paroxysmal tachycardia eighty-four were traced. Fifty-nine per cent were males, and 41 per cent females. The greatest number were in the sixth decade in each sex.

The occurrence of vertigo as a symptom of paroxysmal tachyardia seemed to be determined largely by the coëxistence of arteriosclerotic processes by which the blood supply to the brain was probably diminished. Pain was confined practically to those cases in which there were coëxisting arteriosclerotic processes affecting the aorta and coronary arteries. Vertigo, syncope, and "spells of unconsciousness" should always lead to the exclusion of attacks of paroxysmal tachycardia as a cause.

Thirty-six of fifty-eight patients, traced by questionnaire, report that they are still having attacks of paroxysmal tachycardia. Only one patient was bed-fast at the time the questionnaires were returned.

Twenty-five of the eighty-five patients traced had died. Only twenty of these deaths could be attributed to cardiac disease, making a total death rate of 24 per cent. The total death rate among males (26 per cent) is slightly above that for females (21 per cent).

Of forty-eight patients with minimal or no cardiac findings at examination, five (10 per cent) died from cardiac disease. Of thirty-six patients with definite findings of cardiac disease, fifteen (42 per cent) died.

The death rates were high in cases of paroxysmal tachycardia associated with aortic and coronary disease (57 per cent), and with endocarditis (46 per cent). The estimation of the prognosis of paroxysmal tachycardia, so far as this study is concerned, consisted very largely of the estimation of the type and degree of the underlying cardiac damage.

MEDICO SOCIAL ASPECTS OF HEART DISEASE

BY BESS LYNDE RUSSELL

(Continued from Page 643)

6. Chronic and Convalescent Care of Cardiac Patients in Boston

New York* has 350 beds available for convalescent care of potential cardiacs and for those with organic heart disease in whom improvement is to be expected. Yet such provision in New York is inadequate. "In Bellevue Hospital alone there were treated during the year 1919 over 700 cases of organic heart disease; the beds open to convalescent cardiacs would hardly suffice to provide after treatment, for those discharged from this one hospital."†

One of the largest and most widely used convalescent resources in New York State is Burke Foundation at White Plains. It has a capacity of 80 beds for cardiacs and takes only ambulatory patients (men, women and children). Situated ideally in the country, recreation and occupational therapy are successfully employed as physical and mental aids in convalescent treatment.

Boston also faces a serious problem in relation to the chronic care of cardiacs. There is no provision for men and adolescent boys, and provision for women and children is inadequate. Boston has 62 beds for women and children with potential heart disease or organic heart disease who need bed care, or long-continued hospital care.

Two hospitals in Brookline, the Children's Heart Hospital and the House of the Good Samaritan, supply this care.

The Children's Heart Hospital* has 20 beds for boys and girls between the ages of 5 and 12, but as the average stay is 3 months, 22 days, an average of only 48 patients can be taken during a single year.

The House of the Good Samaritan, out of a capacity of 74 beds, devotes forty (40) to the care of women and children cardiacs: 34 beds for females; six (6) for boys 6 to 12 years of age. Twenty-six of the beds are for children, hence there are only 14 beds in Boston for cardiac women and adolescent girls needing bed care. This hospital accepts any kind of heart lesion, potential cardiac or chorea. There has been no stipulation as to prognosis in the past.

A recent development at this hospital is the establishment of school facilities through coöperation with the Board of Education. Ambulatory children are taught daily in the class room; children in the ward receive group instructions. Not only are children kept up to grade in school, but discipline is made easier at the hospital by the interest which the teacher inspires—not only by her presence, but by the tasks which she leaves for preparation for following classes.

Miss Coleman, the Superintendent, also has made other suggestions: (1) Twice as many beds for cardiacs could be easily filled if such were available. (2) There is a tendency to reject elderly people who are not helpable. (3) Among the patients too many are re-referred, indicating usually that home conditions have not been adequately "jacked-up" during the patient's period of chronic care.

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*Cleveland Hospital and Health Survey, Part II. The Prevention and Relief of Heart Disease. Reprinted by the Association for the Prevention and Relief of Heart Disease.

†Pamphlet—Sanatoria Care—issued by the Association for the Prevention and Relief of Heart Disease.

*This hospital has been closed for lack of funds.

In addition to the lack of provision for cardiac men and adolescent boys, Miss Mary E. Byrne, Superintendent of the Children's Heart Hospital, mentions the following needs for which application is frequently made:

1. Vacations for chronic cases.
2. Provision for:
   a. Children suffering with chorea.
   b. Children under 5 and over 12 years of age.
   c. (Sometimes) for colored children.

Several convalescent homes in or near Boston offer convalescent care for a brief period, but the two statements given below (from Chickering House, Dedham, Mass., and from St. Luke's Home, Roxbury, Mass.) indicate how difficult it is to care for cardiac patients adequately, under the present arrangements.

"Chickering House does have a few heart cases, but we consider it rather unwise. We have no downstairs room and no elevator. We limit the times over the stairs as much as possible, but it has to be at least twice a day and three times to fulfill our schedule. Of course, that is too much for many cardiac cases. We are not equipped to serve meals away from the dining-room nor to give special diets. If it is a case that should be careful of diet, we often find it difficult for the patient to deny herself at the family table. Of course, it is rather embarrassing to keep reminding her."

"In regard to convalescent care of chronic cardiac disease at St. Luke's Home, we take young cases of rheumatic heart disease who are inactive and who have been allowed to be up at least eight (8) hours a day. We have no set time of stay at the Home. These cases average about three weeks. They must be ambulatory. At St. Luke's they use the elevator. No work is required of the patients."

The Homeopathic Hospital maintains a convalescent home (Nash House) available for men, but is little used by social workers, owing to the inability of most patients to pay the fee of $17.50 per week.

Two interesting points of view have been expressed by some of the hospital social workers in relation to convalescent care for the patients suffering with heart disease.

1. Some feel that a varying period of convalescence for all bed patients would have medical and educational value, if carried out in a model institution; that it would more adequately complete treatment begun in the hospital and, in addition, give patients and parents a vivid picture of proper care as instituted by cardiac experts.

2. There is also a strong feeling that institutional convalescent care is neither practical nor educationally sound, for all types of cardiacs, especially children, and that convalescent care in the home should be strongly advocated as an educational measure. The contention is that since the major portion of the patient's life must be spent in the home, every effort to elevate home standards, and to interpret his disability to the family, should be made, thus making the home an essential factor in the prevention and relief of heart disease.

However, to make such an educational measure a fundamental factor in convalescence is a difficult task. It is easier to gain the interest of the community in establishing and developing institutions for such prolonged treatment than to arouse a similar interest in the educational development of the home for the same purpose. The institution is tangible, available for inspection, and its results more readily and vividly interpreted to the public. The raising of home standards, the education of the individual family to meet the cardiac's needs, as a basis for home convalescence, is an asset of the greatest constructive value, but is slowly perceived by the laity. Such was the case in the growth of educational measures in the tuberculosis campaign.* For various reasons it has been the sanatorium, with its promise of restoration of patients to wage-earning capacity, that has appealed effectively to legislators as well as to private philanthropy. The still more important fields of the dispensary and hospital, with their peculiar educational and preventive influences, have not, until the last two years, attracted the attention they deserve. "In the campaign against heart disease the specialists concerned in promoting the program for prevention and relief should, from the beginning, emphasize the home as the primary convalescent resource, supplementing institutional care as an interim measure."

Miss Clara M. Welch† (now Mrs. Henry Sewell) has interestingly summarized the essential reasons, from the angle of the child, for removing children from the home in a study entitled, "Symposium on Endocarditis in Childhood": "I know of only five reasons which make it justifiable and necessary to care for a child with heart disease outside of his home. First, when there is present a condition needing constant medical and nursing care. The solution here is, of course, hospital care. Second, when other illness in the family, usually that of the mother, makes home care impracticable. Third, when there is a large family of young children in a small home so that anything like rest and quiet

*The Campaign Against Tuberculosis in the United States, compiled under the direction of the National Association for the Study and Prevention of Tuberculosis, by Philip P. Jacobs. Russell Sage Foundation, Charities Publication Committee, 1918.

†Symposium on Endocarditis in Childhood, by Fritz B. Talbot, M.D., Boston; Richard S. Eustis, M.D., Boston; J. Herbert Young, M.D., Boston. Reprinted from the Boston Med. and Surg. Jour., Sept. 2, 1915.

is impossible to attain. Fourth, when there is persisting ignorance and lack of coöperation on the part of the parents. Fifth, actual criminal neglect on the part of parents who are able to bear the burden."

7. THE SCHOOL IN RELATION TO THE PROBLEM OF HEART DISEASE

Sir Leslie Mackenzie,* in speaking of the medical inspection and treatment of school children in England and Wales, emphasizes this point in relation to the organization of such school medical services: " . . . . in the multitude of details, the administrative principle involved is apt to be forgotten. It is that, to discover disease, we must go out to look for it. It is no longer enough to wait until the sick child comes to the doctor. That method, it is now proved, leaves whole fields of incipient disease unexplored. It is not too much to say that before the days of medical inspection in Britain, millions of children who needed medical attention went systematically without it because there was no machinery for discovering their needs."

Additional machinery is needed in preventing and relieving heart disease in school children in Boston in terms of active coöperation of the School Board, through its medical departments, with cardiac experts, with the parents and with the child itself. New York and Philadelphia have already demonstrated how such coöperation may be accomplished. Philadelphia has 19 cardiac clinics, caring for about 3000 cardiacs, and 10 health centers organized to examine school children suspected of having a cardiac condition. These cardiac clinics and health centers function under the standards of the Philadelphia Association for the Prevention and Relief of Heart Disease. Children examined by the school doctor, found to have a history of infectious or contagious disease, are referred to the health center for examination; if the physician at the health center discovers any history of acute rheumatic fever, chorea, chronic tonsillitis or actual heart disease in these children, they are transferred to one of the cardiac clinics and there followed closely by both the doctor and social worker. Physicians in the school departments and health centers have previously had several months of intensive training in the cardiac clinics of the city.

The record of preventive medical work done in our Boston public schools is well worthy of discussion at this point. In Boston physical examination of all school children is carried on under the supervision of Dr. William H. Devine, Director of Medical Inspection. Dr. Devine is assisted by a corps of 50 physicians giving half time and 52 full-time nurses. In the year 1922, 35,000 visits to the homes of the children were made in the effort to secure correctional treatment for the physical defects noted by the school physicians. In 1920-1921 Dr. Devine* reported that:

107,664 children were examined by 48 school physicians.
56,506 children were found with defects.
75,030 defects were found in these children.

Included in the above list those of peculiar interest in relation to heart disease are:

Cardiac disease:	
Organic	**1,455**
Functional	**2,404**
Hypertrophied tonsils	**13,238**
Chorea	**26**
Defective teeth	**43,685**

The incidence of rheumatic fever, and other infectious diseases (other than tuberculosis), "growing pains," recurring sore throats, were not mentioned in this list. The fact that only 26 children were noted with chorea shows that, with the stress of other work, only limited attention is given to the diagnosis and treatment of this important and often pre-cardiac condition. A casual inquiry at a few Boston hospitals on the part of the writer revealed 140 cases of chorea in Boston school children diagnosed during this same period.

A valuable source for study is to be found in the school health histories which record the defects and diseases of all children from the kindergarten through the grades. A study of the type and onset of infectious diseases, together with the present physical condition of the child, ought to give further valuable insight into the preventive aspects of heart disease.

Another group of children of interest to cardiac specialists would be the 442** children not recommended for employment certificates (1921-1922), owing to physical disabilities. During this period 8281 children were examined for such certificates. How many refused certificates were cardiacs? What is being done for them?

As a result of the study by the New York Association for the Prevention and Relief of Heart Disease, of children who were refused work certificates in New York City, 500 were found to be cardiacs. Effort was made to place some of those children in the Manhattan Trade School, only to find that handicapped children were not acceptable. According to the Smith-Hughes Bill, the Federal Appropriation for the Trade School would have been cut off if defective children had been admitted. Through coöperation of the New York Association For the Prevention and Relief of Heart Disease, the Board of Education and the Manhattan Trade School, a special trade class for cardiac children has been opened (January, 1923). Medical supervision and vocational guidance are two factors which are being particularly emphasized in this new undertaking.

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*Development of Preventive Medicine and Its Outlook. Nelson Loose-Leaf Medicine, Vol. VII; Prevention of Disease, Public Health, p. 13.

*Annual Report of the Superintendent, Boston Public Schools, 1921.

**Comparative Statistics on Physical Examinations of Pupils of the Boston Public Schools from Dec. 1, 1915, to June 30, 1922.

Turning to the actual diagnoses of heart disease, in 1922 Dr. Devine[†] states that 3.25%, or 4031 Boston school children have cardiac disorders either organic (1.25%) or functional (2%). Comparing the statistics of 1915-1916 with 1920-1921, it was noted that there was an increase of 20% in cardiac diagnoses made during this period. The correctional work carried on by the school nurses (for the year 1920-1921) is shown in the statistics below. Table A[‡] shows that many of the cardiacs with organic disorders were placed under medical supervision. Table B indicates how few with functional disorders[*] were so placed (2404 cases of functional heart disease in all the Boston schools for this same year).

A

Number of Organic Cardiac Cases		1224
In care of family physician	716	
In care of hospital	359	
Re-examined, O. K.	126	
Left school and moved from city	15	
Treatment refused	1	
No treatment recommended	6	
Christian Scientist, no medical care	1	

B

Number of Functional Cardiac Cases		212
In care of family physician	27	
In care of hospital	29	
No treatment necessary	156	

Even by this brief review of the data two points seem to be clearly emphasized:

That 52 nurses, endeavoring to complete correctional work for 56,506 children,[**] cannot give intensive attention to the follow-up of heart conditions in these nearly four thousands cardiacs, nor even enter upon the field of social readjustment which is of such vital importance in the prevention and relief of heart disease. The large group of functional cases (known to be only under the general supervision of the School Medical Department) would prove an important group for study and treatment by cardiac specialists chiefly interested in the prevention of heart disease.

Dr. Devine realized that there is great need for coöperation between the public schools, the medical profession and the community, if there is to be any marked decrease in the incidence of heart disease among school children. Not only is diagnosis essential, but long-continued medical and social supervision are fundamental requirements if preventive and relief work are to be accomplished.

The present ruling of the Boston Public School Committee,[*] that no information is to be given out in regard to school children, at once suggests a barrier to be broken down if such coöperation is to become effective.[†]

New York has made progress in the school field. Special cardiac classes have been formed. Dr. Robert Halsey,[‡] New York, in an article entitled "Early Recognition and Proper Care of Heart Disease Among School Children," explains as follows: "In New York two general plans are being followed as to supervision: the children are being followed by special clinics, one group attending the regular schools; in another group, the children are segregated at one central school. There are eight clinics supervising the two groups of this type." Dr. Halsey adds that the social worker in the clinic assumes the responsibility of the children in relation to medical follow-up, home conditions, vocational guidance, industrial placement, etc.

Since this article was written it has been decided to close these special cardiac classes in New York as 90% of the children were found able to either carry on their usual activities or to do so with slight curtailment; in addition to this group a few children were found too ill to continue in school. The other children will be returned to the regular school classes under the supervision of the cardiac specialist.

School resources in Boston, of peculiar value in cardiac treatment, such as the Trade Schools and Vocational Guidance Bureau, were observed and assets discovered which should be utilized for suitable cardiac cases.

At the Boston Trade School for Girls, Miss Florence Ledbetter, the Principal, has already been doing work with about a dozen cardiac children. She is much interested in the problem of heart disease and feels such a school could become truly serviceable for cardiac patients. As the school accepts students throughout Massachusetts who have completed the sixth grade, and as the average period of training requires but one year, with industrial placement by the school generally assured, this vocational resource ought to become a valuable asset for cardiac children. Extension courses are offered for skillful pupils, and student aid is available. Classes are held on four floors, but it is possible to obtain training in restaurant, machine power work, millinery and dressmaking within the limit of the first two floors. By installing elevator service, however, all types of training would be accessible for ambulatory cardiacs.

[†] Comparative Statistics, by William H. Devine, M.D. Physical Examinations of Pupils of the Boston Public Schools from Dec. 1, 1915, to June 30, 1922. Boston Med. and Surg. Jour., Vol. 187, Nov. 30, 1922, pp. 774-777.

[‡] Annual Report of the Superintendent. School Document No. 11, 1921, Boston Public Schools, p. 58.

[*] In relation to this question, Miss Helen F. McCaffrey, Supervising Nurse of the Department of Medical Inspection, Boston Public Schools, writes in a letter to the author: "The functional cases in the majority of instances were not recommended for treatment by our school physicians. They are noted by them in order that they may be observed more carefully."

[**] See p. 2.

[*] Superintendent's Circular, No. 91—1920-1921. "Giving of Information in Respect of School Pupils."

[†] An effort was made to study the incidence of rheumatic conditions in the homes of school children in a typical grade school during the course of this study, but Dr. David Scannell, Chairman of the Boston School Board, and Dr. W. H. Devine were unable to give permission owing to this ruling.

[‡] "Early Recognition and Proper Care of Heart Disease among School Children," Robert H. Halsey, M.D., New York Post-Graduate Medical School and Hospital, New York City. Pamphlet 1-4 pp.

At the Boston Trade School for Boys the outlook was not as encouraging for handicapped children. Mr. William C. Crawford,* the Principal, has stated "that a boy cannot be entered if he is physically and mentally handicapped; we have all the boys carefully examined before admission so as to exclude any who have handicaps, especial notice being taken of the condition of heart and lungs."

Miss Susan J. Ginn, Director of Vocational Guidance of the Boston Public Schools, feels that her department could be used to greater extent and more intelligently if physicians and social workers would define the degree of physical limitation of cardiac patients desiring to enter industry. The general "light work" recommendation, so frequently sent to such a bureau, does two destructive things: 1. It gives the patient the wrong point of view; "light work" to him means a clerical or easy job, regardless of his educational equipment, and the patient often becomes obstinate in accepting any other kind of work for which he is more fitted. 2. It gives the vocational guidance worker little insight into the industrial capacity of the patients. She needs a list of taxing features to be avoided, in order that she may select a suitable job for the cardiac. Miss Ginn did not know the number of pupils who were found to have cardiac difficulties when examined for work certificates, as the physicians do not refer such students if the pupil's proposed occupation was found to be suitable. At the Vocational Bureau the attitude of employers toward the cardiac is a problem. The fear expressed by employers that most cardiac patients "fall dead" is based on an ignorance of medical facts. Patients and parents also share in this belief. A lecture bureau which would reach teacher-parent associations, various civic and industrial organizations would greatly help to create a more intelligent public opinion which is essential to any effective campaign for the prevention and relief of heart disease.

8. INDUSTRIAL PROBLEMS

The industrial problems of heart disease are complicated by apprehension: (1) that the cardiac may "fall dead"; (2) that with the onset of crippling conditions he will become a liability on industry. There is also general ignorance of the facts that the cardiac's medical condition can sometimes be defined; that the functional capacity of the heart can be estimated; and that "heart disease and valuable productive ability can coexist in the same individual."**

To meet these problems at least two courses of action are indicated: Further study of functional capacity of cardiac patients in relation to specific processes in industry and education of both employers and the general public in regard to our present knowledge of the cardiac patient as an asset in industry. With these two factors recognized, with intelligent interest in the subject replacing the present fears, a big step will have been taken toward opening the doors of industry to the worker with cardiac limitations. Also there will be a more reasonable interest in studying processes within industry indicating certain types of work which exclude taxing features harmful to cardiac workers, contributing at the same time the maximum production of the average employee. This appreciation of the cardiac employee would also stimulate more frequent medical examination and closer supervision in factory plants, emphasizing the constructive value of seeking to fit the cardiac into industry and thus lessening the expense of labor "turn over."

Dr. Paul D. White* in defense of the employers' attitude that employment of cardiac patients increases compensation risks states "that there would be no difficulty through the country at large to get suitable occupations for people with heart disease if absolute assurance could be given their employers in accepting them that the *onset* of crippling symptoms or signs referable to their circulatory system could not be laid at the door of industry."

Dr. Wade Wright of the Department of Industrial Medicine of the Harvard School of Public Health, on the other hand, points out that man's work must carry much of the responsibility for cardiac damage and so industry through workmen's compensation can properly be called upon to bear the burden of such damage. Also that any blanket action to waive compensation of any special group of workers might lead to a general undermining of the whole principle of workmen's compensation legislation. It is clear to all who have given careful thought to the subject that this is a joint problem for industry and medicine to study and solve.

To gain further insight into the nature of these problems a brief analysis will be given of several special investigations; the attitude of insurance companies, the work of the Industrial Accident Board, the Division of Vocational Education of the Massachusetts State Board of Education and a study of Eighty Industrial Workers from the Cardiac Clinic of the Massachusetts General Hospital.

Workmen's Compensation for the Cardiac

A. The attitude of Workmen's Compensation Insurance Companies:

Miss Elizabeth McShane, formerly social worker in the Industrial Clinic, Mass. General

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*In a letter written to the Author.

**"The Problems of Heart Disease in the Industrial Worker," by Paul D. White, M.D., Journal of Industrial Hygiene, Dec., 1921, Vol. 7, No. 8, pp. 219-226.

*"The Heart Disease Problem in Industry," by Paul D. White, M.D., Boston. The Nation's Health, Sept., 1922, pp. 553-556.

Hospital, has contributed the following analysis of the attitude of several insurance companies concerning the workmen's compensation for cardiacs.

During December, 1922, and January, 1923, the claim departments of six representative workmen's compensation insurance companies were interviewed by a member of the staff of the Industrial Clinic of the Massachusetts General Hospital. The object of these interviews was to find out:

The attitude of the insurers toward paying compensation for heart disease.

Whether the insurers considered it necessary to investigate such claims more carefully than claims due to disability from other industrial accidents or diseases.

Whether cardiac cases were difficult to return to industry, and what methods were being used to rehabilitate them; the number of cases of heart disease receiving compensation payments during 1922, and the length of the periods during which they were disabled.

The insurers were unanimous in saying that they accepted cardiac cases for compensation payments only after the most rigid examination, and with great unwillingness. The reasons given for this attitude were quite a general belief among insurance men that very many alleged cardiac sufferers were in reality malingerers; that if once granted weekly payments most cardiacs would easily become pauperized, and that the extent or true cause of cardiac disability was almost impossible to determine accurately. Therefore, the general practice among insurers is to "lump sum" cardiac cases and close them. From $500 to $1,000 is usually paid, not because such amounts have been shown to be really helpful, but because "people often ask for $1,000 and are willing to settle for $500."

The industrial rehabilitation of cardiac cases is almost an unknown field to these insurers. It requires a careful study of industrial processes and factory conditions, and an amount of follow-up work which no insurer is at present prepared to provide.

Only four cases were on the payment list of the insurers, and one of these had been accepted as a case of lead poisoning and had later developed heart disease. One of the others has received weekly payments amounting to over $3,000, and has flatly rejected all efforts to place him at work. He will probably be carried until the $4,000 maximum has been paid and then he will be dropped. Of these four cases, one has been compensated for eight months, one for three and one-half years, one for one year and one for two years.

B. *A Study of Cardiac Cases at the Industrial Accident Board*: Several brief illustrations of cardiacs seeking compensation are given, followed by a longer history of one case argued before the Supreme Judicial Court of Massachusetts. The chief point in all these cases is the sustaining of the principle that the aggravation and acceleration of a previous heart condition to the point of incapacity for work may constitute a personal injury under the Statute.

1. Man—26 years old, married, chauffeur; diphtheria when 6 years old, "diphtheritic" heart disease since childhood; fainting turns since 10 years of age; frequently incapacitated for work; employed irregularly at "light jobs." Died suddenly, after "cranking" his car; cause of death (as stated by Dr. George McGrath) "Natural Causes: chronic endocarditis, mitral and aortic; sudden." It was found that the death of the deceased employee had no causal relation to an injury which arose out of and in course of his employment; the claim of the dependants to be dismissed.

2. Man—40 years old; worked as inspector and night foreman for a rubber company. During recent slack times he had, in addition, loaded drums of fabric, weighing 70-90 lbs., on a truck, when he suddenly complained of a sharp pain and great fatigue. Had previously been able to walk four flights of stairs four times daily in the factory, during the 4½ years employed, without fatigue. Dr. Parker M. Cort, Springfield, impartial physician, reported (in part): diagnosis, cardio-renal disease; mitral regurgitation; broken compensation of heart and arteriosclerosis-nephritis. The cardio-renal condition with strained and weakened heart has been of gradual and progressive origin and probably of long standing. The broken compensation and possibility of the valvular heart disease may have been induced by the severe type of work performed by the man. The Board ruled that the employee had received a personal injury arising out of and in course of his employment as a result of a strain from loading drums of fabric. Compensation was awarded. The probably future period of incapacity was not determinable at that time.

3. Case argued before the Supreme Judicial Court of Massachusetts and decree affirmed.

An employee—a woman—engaged at work in a carpet mill, repairing bad spots in the weaving of rolls of carpet, which included lifting of the rolls and pulling of the carpet, was suddenly seized with "an awful pain under my heart—something gave way." She denied that she had had any symptoms of heart disease before the accident.

The Court ruled as follows: On behalf of the insurer it was argued that harm to the employee was not wholly the effect of work, but came in a large part from a previous weakened condition of the heart; hence, there should be no award of compensation or it should be restricted to that part of the injury which resulted directly from the work, and the part of the injury which flowed from the previous condition should be excluded. Even though the premise be sound, the conclusion does not follow. The Act makes no provision for any such analysis or apportionment. It protects the employee. It is injury arising out of employment, and not out of disease of the employee, for which compensation is made. It is the hazard of the employment acting upon the particular employee in his condition of health and not what that hazard would be if acting upon the healthy employee or upon the average employee. When a pre-existing heart disease of the employee is accelerated to the point of disablement by the exertion and strain of the employment, not due to the character of the disease acting alone or progressing as it would in any rational work, there may be found to have been a personal injury.

The personal injury by accident which, by the English Act, is made the pre-requisite for the award of financial relief, is narrower in its scope than the

> single "personal injury" of our Act. "Personal injury," standing by itself, comprehends a wide range of physical harm. It is not necessary to personal injury that there be a physical impact. Personal injury is the only ground for compensation.
>
> The reasons which have been set forth in this opinion compel the conclusion that on the evidence here disclosed it was competent for the Industrial Accident Board to find the employee had received a "personal injury" in course of, and arising out of her employment, according to the true meaning of the Workmen's Compensation Act.

The Division of Vocational Training, in studying a group of 282 cases referred to their Department for vocational education, found that 14, or 5%, were cardiacs. Each patient was studied individually in an effort to rehabilitate him for remunerative employment. An example of this work was given in a brief statement: An American girl, age 18, elementary school graduate, few months' high school training; industrial experience, filing clerk and messenger in hospital, diagnosed as mitral stenosis and insufficiency. She was given a course in calculating machine operating, at the completion of which she was placed in employment in that line.

Miss Mary E. P. Lowney, after long experience with this problem, believes that studies on types of work or particular opportunities which would be especially suitable for cardiacs would make a just contribution to the betterment of vocational work.

House Bill 1103, under Chapter 52, Resolves of 1922: A Report of the Special Commission appointed to investigate the desirability of providing by law for the relief of handicapped persons other than the blind, is now before the Legislature. The chief recommendation of this Commission was in regard to rehabilitation aid for persons who are actually in training under the direction of the Rehabilitation Section of the Department of Education. This need was realized by the discovery of certain handicapped persons who might have profitably undertaken specialized training, but it was impossible because they lacked funds. If the appropriation of $10,000 is granted* as requested, it will be another asset in extending the work of the Division of Vocational Education and ought to be of value in rehabilitating cardiac patients.

Employment Resources Available in Boston

1. *The Co-operative Work-Rooms for Handicapped Women:*

Miss Hazel Newton, the Manager, states that her work-room has adequate facilities for making an "industrial diagnosis" of the handicapped. Can the client work continuously, stand, sit, get on with fellow-employees, match colors, run the power machine, "boil the tea" for the noon luncheon, scrub the floors, do errands? Is she fit only for institutional care? Can she be industrially placed? Has she capabilities not hitherto revealed? The report of the Co-operative Work-Rooms* states: "We are convinced by experience and observation that most failures are due to mental or temperamental causes; it rarely occurs that mere physical handicap can not be overcome when the mind and will are sound and earnest."

The shop, in the top of the "Charity Building," is unusually attractive, well-lighted, well-spaced and ventilated. The atmosphere was cheerful and the workers were earnestly at work running power, hem-stitching and button-hole machines. Miss Newton has had enough experience with the cardiac to feel sure that her shop should prove to be an increasingly valuable asset for patients handicapped by heart disease—especially as she experiences little or no difficulty in placing her workers industrially.

2. *The Women's Educational and Industrial Union* maintains a Bureau of Occupation for Handicapped Women. Placement of women with cardiac disease who are recognized as having industrial capacity has been made difficult by the fact that it is not readily possible to get definite medical judgment of the applicant's physical capacity. If this information could be secured the Bureau facilities for placement of women could be made much more valuable.

3. *The Industrial Aid Society* deals with a large number of men and women handicapped by illness. In the past the industrial placement of such clients, largely unskilled workers, has been a problem because the language disability of the immigrant and the lack of educational and skilled industrial background have proved handicaps in obtaining so-called "light jobs." A plea was made at this agency also for social workers and physicians in sending patients for employment to include in the histories a list of the taxing features to be avoided in placement.

A very instructive and interesting study of the "Industrial Aspects of Heart Disease"** was made last year by Miss Miriam Lincoln. An analysis of the problems of eighty industrial workers who were patients in the Cardiac Clinic of the Massachusetts General Hospital resulted in the following conclusions:

> 1. "The cardiac should work. His own mental and physical health demands that he be occupied."
>
> 2. "The cardiac can work. These 80 men and women are engaged in about 65 different kinds of work ranging from light clerical work to the heavy task of the longshoreman. . . . They can do a surprising amount of work with impunity.' "
>
> 3. "Industry has a place for the cardiac.

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*Acts 1923, Chap. 434; act passed authorizing the State Board of Vocational Education to furnish aid during rehabilitation to certain persons, not exceeding $10,000.

*The Purposes, Principles and Story of the Coöperative Work-Rooms for Handicapped Women, 1877-1920. 43 Hawkins Street, Boston.

**"Industrial Aspects of Heart Disease: A Study of Eighty Industrial Workers from the Cardiac Clinic of the Massachusetts General Hospital." By Miriam Lincoln. Reprinted from the Journal of Industrial Hygiene, May, 1924, Vol. 6, No. 1, pp. 1-13.

Danger resulting from the employment of handicapped individuals may be obviated for both the cardiac and the industry by a system of physical examinations and placement based on these findings."

4. "The better adjustment of the interests of the cardiac and the industry may be attained by education for suitable and remunerative work, by vocational guidance and by making professional medical, social and industrial counsel available for the protection of the handicapped worker and his employer."

9. PHILANTHROPIC RESOURCES

In the cardiac problem, an outstanding need in the prevention and relief of heart disease is the development of the home as a resource for care. The elevation of home standards and the interpretation to the family of the needs of the cardiac are sound and permanent factors in relation to treatment. Among patients who attend cardiac clinics at large urban hospitals the problems of poor home conditions and ignorance are present to a considerable degree. Therefore, in the carrying out of treatment: (1) the hospital social worker needs the coöperation of those lay agencies whose chief concern is the welding of family life on a higher level; and (2) the lay social worker needs, as well, in relation to the cardiacs carried by her society, a comprehensive knowledge of the resources for medical treatment to be found within the hospital. Hence, in the process of this study, there has been a getting-together of workers interested in family welfare, in child-placing and in medical work, with the aim of more closely correlating facilities for the medical and social treatment for cardiac patients. A résumé of the scope of work already carried by these lay agencies, over the period of a year, the types of the cardiac problems which they are meeting, and something as to their method of social treatment is given below.

A. *The Boston Family Welfare Society*: Out of a total of 4154 cases carried in the year 1921-22, 92 were cardiacs. Miss Elizabeth L. Holbrook, the Assistant General Secretary of the Boston Society, in studying 50 of these families in which there were 57 cardiac patients, gave some interesting data in relation to age groups—diagnosis and treatment.

DIAGNOSIS

Aged	No. of Patients
Mitral regurgitation	1
Auricular fibrillation	1
Aortic regurgitation	1
"Leaking valve"	2
"Heart trouble"	5
	10

Middle Aged	No. of Patients
Mitral stenosis	5
Syphilitic heart	2
Mitral regurgitation	2
Endocarditis with arterio-sclerosis	1
Myocarditis with arterio-sclerosis	1
Rheumatic heart	3
"Leaking valve"	1
"Heart trouble with hemorrhage"	1
Cardio-renal disease	1
"Heart trouble"	8
	25

Children	No. of Patients
Congenital heart	1
Rheumatic heart	8
Valvular trouble	1
Chronic endocarditis with question of congenital syphilis	2
Myocarditis	1
"Heart trouble"	9
	22

Miss Holbrook states: "It is evident that our workers have failed to secure from the hospitals definite diagnoses." The large number of diagnoses of "heart trouble" points to this. As social workers in philanthropic agencies help in making plans for their clients for consistent follow-up of medical treatment, and sometimes assist in securing limitations of activity for cardiacs in relation to school and industry, it is important that such workers should have an intelligent appreciation of the etiological and functional condition of cardiac patients under their care.

In response to the suggestion that hospital social workers refer cardiac patients with inadequate home conditions to the family welfare societies for elevation of standards, Miss Holbrook apparently feels that undue emphasis is placed on the financial rather than the educational phases of the work, as she states: "In four instances only did the medical social service department ask us to do anything more for the patient than to give financial help. These requests were to find lighter work; to arrange the living arrangements of a girl so that she could have nourishing food and to help in getting the patient into the hospital. We were not, so far as our record shows, asked to help with reference to discipline of the child, or general hygiene."

In the group of 50, 11 families showed more than one member ill with heart disease.

4 families with 3 cardiac cases each
7 families with 2 cardiac cases each

To quote again from Miss Holbrook's report: "We apparently have shown no interest in bringing in other members of the family for examination where one member has heart trouble. Yet in a number of these families there was evidence of under-nourishment and a general rundown condition. We are glad to follow the directions of the medical social service department, but apparently know so little about heart disease that we are leaving the home situation untouched in these cases."

Miss Holbrook's frank acknowledgment of lack of medical insight on the part of her workers suggests not only the necessity for more specific medical information on each patient referred to them, but also indicates that a course of lectures, available for lay social workers, might be of educational value in promoting medico social treatment for cardiac patients.

B. *The Boston Provident Association* reports that, out of 4680 individuals with whom they dealt in the year 1921, only 22 showed evidence of heart disease. Thirteen of these were reported in the foregoing statement of the Family Welfare Society.

Miss Anne Wilson, Assistant to the General Secretary, reported that in the majority of the other cases, cardiac patients recovering from infectious diseases, or in a "tired out" physical condition, were referred by medical agencies to have treatment supplemented with nourishing food, with provision for adequate rest or freedom from financial difficulties. It is apparent from Miss Wilson's report that the Boston Provident Association would coöperate fully in supplementing the social needs of cardiac patients referred by hospital social service departments.

C. *The Mother's Aid Department,* Division of Public Welfare of Massachusetts, cares for 3364 families, including 11,000 members, at the present time. Half of this number live in Greater Boston and represent homes in which the father has died or is incapacitated by illness. To secure such financial support for the family from the State, proof must be available that the mother is a suitable person to bring up her children. To secure continuance of aid, it is necessary to keep home conditions up to the level of decency. Hence, this is a controlled group, in which decency and intelligence are important factors. The following charts show: (a) Causes for accepting families for State aid, and (b) Causes of death in the father, based on a study of 3516 families who received "Mother's Aid" during the period Sept. 1, 1913, to Sept. 1, 1917.

A

Death of father	75%
Incapacity of father	11%
Irresponsibility of father	14%

B

Tuberculosis	27.8%
Pneumonia	13.7%
Accidents	11.7%
Heart disease	8.5%
Kidney disease	5.7%
Shock, etc.	4.2%
Cancer	4.2%
Other causes	24.4%

The Boston Finance Commission, in a study of 233 Mother's Aid and Overseers of the Poor cases, gave a list of 54 families in which it had discovered heart disease was a factor. An analysis of this material shows certain interesting facts: (1) the number of families in which several members were afflicted with heart disease; (2) history of previous rheumatic infection; (3) age groups; (4) the prevalence of heart disease in females (20% greater); (5) the number of fathers dying of heart disease in early manhood.

I. In the 54 families there was a total of 70 members with a history of heart disease. Eight families had two or more members with a history of cardiac conditions.

II. In studying the age groups of the living members of the family the following statistics were given:

Number of Patients	Age Groups	Sex F.	Sex M.
16 children	8-14 yrs. of age	10	6

Diagnosis		
Heart disease	8	
Heart disease and rheumatic conditions	3	
Potential heart disease	1	
Myocarditis	1	
Miscellaneous	3	
	—	16

Number of Patients	Age Groups	Sex F.	Sex M.
10 adolescents	15-20 yrs. of age	6	4

Diagnosis		
Heart disease	5	
Heart disease and rheumatic conditions	3	
Valvular (father died of paresis)	1	
Mitral regurgitation	1	
	—	10

Number of Patients	Age Groups	Sex F.	Sex M.
6 adults	21-25 yrs. of age	2	4

Diagnosis		
Heart disease	3	
Heart disease and rheumatic conditions	2	
Myocarditis	1	
	—	6

Number of Patients	Age Groups	Sex F.	Sex M.
8 adults	36-50 yrs. of age	6	2

Diagnosis		
Heart disease	4	
Heart disease and rheumatic conditions	2	
Chronic endocarditis	1	
Valvular heart disease	1	
	—	8

Number of Patients	Age Groups	Sex F.	Sex M.
2 adults	over 50 yrs. of age	—	2

Diagnosis		
Heart disease	1	
Myocarditis	1	
	—	2

Number of Patients	Age Groups	Sex F.	Sex M.
3 adults	age not stated	3	—

Diagnosis		
Weak heart	1	
Heart disease	2	
		3
Total number of patients		45

Female 27 Male 18

In this group of 45 patients the social workers apparently had little medical information as to the cause and degree of heart disease, shown by the general terms "Heart Disease," in 22 patients. This is another example of need in our lay agencies for closer coöperation with the medical institutions and for the opportunity to gain deeper insight into the nature and treatment of cardiac disease through the interpretation of physicians who have specialized in this field.

III. The age groups of 22 fathers who died with heart disease were as follows: and indicate that over 68% of the fathers died under the age of 41:

21-30 years	2
31-40 years	11
41-50 years	5
Over 50	1
Unknown	3
	22

Mrs. Elizabeth Maloney, Director of the Mother's Aid Department, who has generously aided us in various phases of the study, states that her workers have already become conscious of the prevalence of heart condition in their families, and that it would facilitate getting additional financial aid if the dangers of heart disease in terms of morbidity and mortality, and the preventive aspects of treatment, could be as thoroughly appreciated as they are in tuberculosis by public and private philanthropic agencies and by the public at large. Mrs. Maloney presented the following facts about a family who needed interpretation in some such terms as indicated above.

Father	45	died of tuberculosis in 1914.
Mother	—	"run down," nervous.
Son	14	rheumatic heart disease; prognosis hopeless.
Son	12	bad heart trouble—"relaxing muscles of the heart."
Daughter	9	"nervous wreck," anaemia—pre-tubercular.
Son	5	swollen glands.
Son	3	had muscular rheumatism last fall.

D. *The Child-Placing Agencies*: Child placing agencies are valuable resources in the social treatment of heart disease. "Medical Placements" have become important factors in the program of such agencies. The function of placing cardiac or pre-cardiac children with a good prognosis, for bed or other care, in foster homes, is recognized as one of the most interesting phases of child welfare work. The hospital social worker frequently needs such resources when there is illness in the family, particularly of the mother, or when younger children make quiet and rest impossible for the patient, or during the more acute period of convalescence, when the mother, though devoted, may be of subnormal intelligence. A review of some of the activities of two of these agencies will reveal the extent to which such coöperation has already been defined.

The Children's Mission, during the year May, 1920, to May, 1921, accepted 99 children because of physical disabilities, and carried out treatment as prescribed by physicians. Of this number, 18 were cardiacs; 6 cardiacs with chorea, and 15 suffered with chorea only, making a total of 39 cardiacs or pre-cardiac children.

In a group of 22 children with heart disease there were 8 girls and 14 boys between the ages of 6 and 17. The range of the placement period was from two weeks to over one year; the average was a little more than three months. Foster home care, bed care, vacations and follow-up work as related to medical needs were the principal activities in social treatment. The outcome of such care presents a hopeful picture; in one case the prognosis was hopeless; in one the patient refused advice; eight were improved; six improved and at school or work, and six normal or in excellent condition. The cost to the Children's Mission in terms of board and clothing for these 22 children was $2064.23. The average board was $6 a week.

The Children's Friend Society: In 1922 the Children's Friend Society placed 32 sick children; of this number, 15 were cardiacs; 11 boys and 4 girls, ranging in ages up to 16. Eleven of the children suffered with rheumatic heart disease and four were complicated with chorea. That the use of foster homes is a constructive asset in treatment of cardiac disease is evidenced by the report of the present conditions of these children. Ten were greatly improved, returning to school or work; one was cured (?) and the four with congenital heart disease had poor prognoses. The average length of care per child was 4 months at a boarding rate of $38 a month. The following illustration, submitted by Miss Frances Barnes, General Secretary of the Children's Friend Society, gives a vivid idea of the work of a child-placing society, in coöperation with the medical referring agency.

> A lad of 16 years, third year high school, was suddenly taken ill with rheumatic fever, complicated by a heart condition. His physician recommended convalescent care outside of the home, as the father was a cripple and the mother was forced to work to support the family. The boy was placed by the Society in the country for convalescent care, returning at regular intervals to be examined by his doctor At the end of three months the improvement was so marked that the physician recommended return to his usual activities. After many conferences with the doctor, social worker, family and school, consideration was given to the boy's wish to leave

school and enter industry, and he was guided in obtaining work suited to heart condition by the visitor of the Children's Friend Society. The boy has been regularly at work for over three months with an insurance company, at the same time keeping in close touch with the doctor and hospital social worker of the Out-Patient Department of the referring hospital.

10. Organization of Local and National Cardiac Associations

The interest in organized work for cardiacs began a number of years ago in various sections of the country when many discouragements confronted the physician as he attempted to treat cardiac patients in the general medical clinics. Out of this need grew the formation of special clinics which were soon supplemented by social service. These isolated clinics, desiring the advice and stimulation of similar groups, formed cardiac associations and later developed organized societies. "The idea of an association for the prevention and relief of heart disease originated with Dr. Lewis Conner of New York City, who had observed, as all had observed, cases of laboring men with heart disease, who, having had their failing hearts restored by hospital care, were obliged, upon their discharge from the hospital, to return to heavy work,—the only kind they could do,—with prompt injury to their hearts and consequent return to the hospital. This seemed to Dr. Conner not only uneconomic but also barbarous. As a result of his individual efforts for several years, an association was formed in New York City."*

Since that time New York has led the way in organizing work for the prevention and relief of heart disease. As a pioneer in this field it has carried on a program actively for seven years; a few of its outstanding contributions follow: (1) forty-three cardiac clinics have been established in New York City; (2) the problem of cardiac children in the public schools has been studied and a program advised for their special needs; (3) studies in relation to vocational guidance and occupations suitable for cardiacs have been initiated, with the result that organized means are now available for securing appropriate work; (4) propaganda, through distribution of educational literature and by means of a lecture bureau, has been extensively carried on.

Miss M. L. Woughter (Secretary of the New York Association for the Prevention and Relief of Heart Disease, since the beginning of that organization) has outlined the job of the executive secretary of a local cardiac association as seen through the experience of the New York Association. Some of the outstanding features are quoted:

A. Ample time should be given to know:
  1. The Directors, Committees, etc.
     The following committees are needed: (1) Executive; (2) Research and Scientific Work; (3) Education; (4) Cardiac Clinics and Schools; (5) Institutional Care; (6) Vocational Training and Occupation; (7) Finance and Membership.
  2. All established cardiac clinics.
  3. Learn existing convalescent homes taking cardiacs, those who do not, and all other possible opportunities for convalescence. See if they know of the cardiac clinics and how very carefully selected heart cases will be sent if taken through the clinics.
  4. Learn all coöperative agencies. Find what each has to offer and how you can coöperate.

B. Learn hospitals that have no cardiac clinic. The future work depends upon the establishment of these clinics and the character of work that they do. They must serve as the nucleus from which all the activities for heart patients develop.

C. Various other lines of activity can then be developed:
  1. Convalescent homes; school coöperation; vocational guidance; occupation; special facilities for chronics; better and longer stay for hospital patients; publicity all the time through every available resource.

The activities of the New York Association have stimulated the idea of organization in other cities. Philadelphia, Montreal, Chicago and Boston have already formed such associations. The Philadelphia Association for the Prevention and Relief of Heart Disease is two years old. Already nineteen cardiac clinics have been organized; a plan for discovering cardiac and precardiac conditions in school children has been worked out through the coöperation of the School Board and Department of Public Health, and such children placed under the supervision of cardiac experts and social workers. A lecture bureau has been developed and talks are given on heart disease at parent-teacher meetings and before other civic and philanthropic associations.

Chicago organized an association for the control of heart disease in November, 1922. During this brief period twelve clinics have been organized or systematized; a monthly bulletin published and sent to all members of the association (225 members) to keep them informed of the work and plans of the association. Established convalescent homes are now trying out experiments with a limited number of cardiac patients, with the idea of converting a part or the entire institution into resources for long-continued care under the supervision of cardiac experts. Plans for developing and utilizing the workshop of the Associated Jewish Charities for the vocational training of the handicapped is also under way.

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*The Conception, Organization and Progress of Associations for the Prevention and Relief of Heart Disease in America, by Joseph Sailer, M.D. Monthly Bulletin of Department of Public Health of City of Philadelphia, Vol. 7, Sept. and Oct., 1922, pp. 136-143.

In Boston eight cardiac clinics have been formed. The physicians particularly interested in these clinics, informally organized in February, 1921, as "The Boston Association of Cardiac Clinics"; an article by Dr. Paul D. White[*] entitled "A Campaign Against Heart Disease" gives a résumé of the activity of this organization. A charter was granted by the Commonwealth of Massachusetts on March 28, 1923, to the Boston Association for the Prevention and Relief of Heart Disease, Inc., and the first meeting of the Board of Governors, twenty-five in number, including lay men and women as well as physicians, was held April 23, 1923.

Besides the eight cardiac associations already mentioned, cardiac clinics have been organized in 14 states or 23 cities in the United States, and 2 in Canada.[†] In May, 1922, at the invitation of the Association for the Prevention and Relief of Heart Disease of New York City, a number of those interested in the cardiac problem met in St. Louis to discuss the formation of a National Committee.[‡] It was decided, in view of the magnitude of the health and economic problems connected with heart disease, to form such an association. In the tentative plan accepted, the section on function was stated as follows: "The functions of such a national group would be coördination of efforts, development of research, collection and distribution of information; public health and industrial education; to develop sound public opinion as to the true meaning and seriousness of the problem." A meeting of the National Committee was held at Atlantic City, May 1, 1923, and it was there decided to incorporate "The American Association for the Control of Heart Disease," to be based at the onset on the local cardiac organizations of the various cities.

11. CONCLUSIONS

The prevention of heart disease is by far the most important measure to be considered in putting forward an effective program to wipe out cardiac disease. The early recognition and treatment of rheumatic, syphilitic and thyroid conditions are essential steps in eradicating heart disease, but one of the most important measures is the eventual prevention of such diseases as rheumatic fever, chorea, and syphilis themselves. The Rockefeller Foundation and other laboratories in this country are working toward the discovery of the organism which causes rheumatic fever. The better coördination of the medical departments in industrial plants with services available through family physicians and hospital clinics, would greatly aid in the recognition and treatment of early syphilis and thyroid conditions. Propaganda promoted through lectures on the causes of heart disease at these centers would also have educational value. The utilization of vocational guidance, rehabilitation resources and the study of processes within industry, with the purpose of discovering jobs wherein taxing features are eliminated, are all ways of preventing additional heart damage in the great mass of industrial employees and presents a way for the cardiac to make his fullest contribution to community life.

Extensive research by physicians and social workers must be carried on if we are to learn the facts on which to build a program for eradicating rheumatic fever and other infectious diseases, and to prevent the increase of damage to diseased hearts.

Clinics, manned by cardiac experts, must be increased in number and developed intensively in particular urban localities where the clinic intake is heavy, so as to afford individual attention for patients. The necessity for studying and developing facilities throughout the State for the prevention and relief of heart disease is indicated, if the problem is to be adequately met in the rural sections.

Social and Hospital Treatment: In carrying out the medico social treatment for cardiacs, the service of the hospital social worker is indispensable, both in the hospital ward and in the cardiac and general clinics. Clinical follow-up, suitable hospital care and convalescence, when necessary, should supplement the work. The elevation of home standards, the education of the cardiac and his family in the technique of carrying out the medical treatment, the intelligent utilization of the homes for long-continued bed or chronic care, plans for the vocational and industrial guidance of the patient, are suggestive of the inter-relation of the work of the doctor and social worker in effecting adequate treatment for the cardiac patient.

Individualization of the patient must be preserved; his caliber and interests must be duly considered, in the light of his disability, and when necessary, the educational and philanthropic forces of the community should be enlisted in a plan either to prevent or to relieve his cardiac condition.

Plans must be worked out with Boards of Education and with the assistance of cardiac specialists not only to keep school children with cardiac condition under long-time medical and social supervision, but to prevent damage in healthy hearts. This means the coördination of the work of the parents, family physicians, cardiac specialists, hospital social workers, school doctors, nurses and teachers, the vocational guidance and rehabilitation bureaus, extension schools, industry, and, as important, a reckoning with the intellectual caliber of parents and children themselves.

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[*] "A Campaign Against Heart Disease," by Paul D. White M.D. Boston Med. and Surg. Jour., Nov. 16, 1922, Vol. 187, p. 703.

[†] Monthly Bulletin of the Department of Public Health of the City of Philadelphia, Vol. 7, Nos. 9 and 10, Sept. and Oct., 1922, p. 139.

[‡] A National Cardiac Committee. Robert H. Halsey, M.D Reprinted from Hospital Social Service, Vol. 6, 1922, p. 183.

*A Closer Co-operation Must Be Sought With Industry**

1. To prevent heart disease and heart failure by more frequent medical examinations and closer medical supervision.

2. To minimize the fear felt by employers that cardiacs are always a dangerous hazard, the following measures will have to be given consideration:

a. In relation to insurance compensation: that a differentiation shall be made between the damage caused by industry relative to an employee's heart condition and the damage which came from a previously existing heart condition.

b. Ways and means of putting over the facts that: 1. heart conditions vary in kind and degree. 2. "heart disease and valuable productive ability may co-exist in the same individual."

3. To study processes of work, in order to discover suitable occupation for cardiac patients.

Extensive Educational Propaganda is essential to arouse public opinion to the realization of the seriousness of the cardiac problem, and to make clear the technique of combating heart disease. Physicians and social workers, in their respective fields of activity, must stimulate the fullest coöperation of medical and social organizations and the general public, in uniting in a campaign against heart disease. The recent development of local and national associations for the prevention and relief of heart disease gives assurance that such coöperation and education have already begun.

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*Most of the facts in this paragraph are taken from an article by Paul D. White, M.D., "The Problem of Heart Disease in the Industrial Worker." Reprinted from the Journal of Industrial Hygiene, Dec., 1921, Vol. 3, No. 8, pp. 219-226.

ANILINE POISONING IN THE RUBBER INDUSTRY

BY HERBERT J. CRONIN, M. D., CAMBRIDGE, MASS.

ANILINE can produce serious poisoning to workmen. In the rubber industry, it has been practically discontinued and it has been replaced by less poisonous chemicals. However, its use is occasionally revived and it was during such a retrial that the cases I recount occurred.

USES

Aniline is C_6H_7N and is produced by the action of hydrochloric acid with iron filings upon pure nitrobenzol. It is a colorless liquid that turns dark on exposure to light and air. It has a characteristic aromatic odor. Like its homologues, benzol, toluol, zylol, and naphthalene, which are produced by the distillation of coal tar, it has an intense poisonous affinity towards the blood and the central nervous system.

Aniline is introduced into the rubber during the mixing process, when crude rubber is macerated by hot steel rollers and various chemicals are scattered through the rubber mass. In the factory which I refer to, the aniline was given to the man in a gallon bottle and he would gradually pour the required amount into the hot rubber mass; hot aniline fumes would immediately arise from the mill. The mixer's hands would also become covered with aniline by handling the rubber from the mill.

The function of the aniline is to act as a rubber catalyzer, which is a chemical that accelerates the vulcanization process. Lead was the first catalyzer but now there is a large group of organic chemicals that are used for this purpose. Aniline was one of the first of the organic chemicals used but today, it is largely discarded both because of its dangers and because the newer catalyzers give better products.

SYMPTOMS

Headache, dizziness, weakness, irritation of the nasopharynx and the conjunctiva are early symptoms. Blueness of the face and mucous membranes is the striking symptom. Air hunger, palpitation of the heart, extreme weakness and collapse occur in severe cases. The blood picture is that of methaemoglobinaemia. Insidious protoplasmic changes due to fatty degeneration occur in various organs which result in indefinite symptoms.

Case 1. J. M., age 45, white, Irish, rubber mixer. He came to the plant first aid hospital complaining of headache, dizziness, and weakness. He declared that when he poured the new liquid (aniline) upon his stock, white fumes arose from his mill, which choked him, burned his eyes and throat, and made him dizzy. He did not like this new liquid and the mixers around him also complained of its fumes. He had no further symptoms as the use of aniline was discontinued.

Case 2. Peter M., Russian, age 45, white, rubber mixer. He states that he had been mixing for a few hours, pouring liquid (aniline) from a bottle upon his stock. His fellow employees noticed that his face was getting blue and advised him to go into the open air. He received at this time a slight cut and noted that the haemorrhage was very dark blood. He walked to the first aid hospital and on admission, his face, mucous membranes, and hands were dark blue. He had a rapid pulse, difficulty in breathing, air hunger, general weakness and apprehension of death. He was put to bed and given oxygen inhalations. After four days in bed, his color began to improve. Since that time, he has been totally incapacitated from work, a period of over two years. He now complains of dizziness, shortness of breath on exertion, chronic cough, palpitation of the heart, dimness of vision, and physical and mental depression. His vision can not be improved by glasses, and there is edema below the eyes. He has a marked tachycardia on exertion. It is probable that his present symptoms are due to protoplasmic changes in the cells injured by the aniline.

PROPHYLAXIS

If aniline must be used in industry, it should be handled with caution. It cannot be put in the hands of ignorant workmen without danger. The methods of absorption are through the skin, by direct contact or by clothing wet with aniline; through the lungs by inhalation of the fumes; and through the gastro-intestinal tract by dust absorption or by direct ingestion. Hence employees should be warned to keep scrupulously clean and to change clothing wet with aniline. They should not eat near the machines or without washing their hands. Mills should be hooded to draw off the fumes. The room itself should be well ventilated. Periodic physical examinations of these employees should be made. Rotation of employment is also necessary.

TREATMENT

Mild acute cases should be sent into the fresh air. In severe cases, fresh air, oxygen inhalations, rest in bed until the blueness subsides and then long stay in the open air is necessary. Later, iron and tonics are useful. We had no chronic cases but the treatment is similar except that blood transfusion is sometimes done.

383 Broadway.

Case Records of the Massachusetts General Hospital

ANTE-MORTEM AND POST-MORTEM RECORDS AS USED IN WEEKLY CLINICO-PATHOLOGICAL EXERCISES

EDITED BY
Richard C. Cabot, M.D., and Hugh Cabot, M.D.
F. M. PAINTER, A.B., ASSISTANT EDITOR

CASE 10411

An Irish laborer of sixty came to the Emergency Ward June 6.

F. H. Not obtained.

P. H. Not obtained except that three years before admission he had an operation the nature of which he did not know. He was told that he had gall-stones. After this he had considered himself in good health.

P. I. He dated the onset of his illness from June 2, when he began to have very severe cramp-like pain in the epigastrium followed by vomiting of small amounts of bile-stained fluid. The pain came in attacks lasting four or five minutes at intervals of thirty or forty minutes. His bowels had not moved since the onset in spite of various and energetic enemata. He passed gas June 3, but was sure he had not passed any since that time. Since the onset he had taken only small amounts of liquid by mouth. He had continued to have intermittent pain and to vomit two or three times a day.

P. E. An enormously fat man weighing perhaps 300 pounds. (At necropsy the weight was estimated at about 400.) Short thick neck with several chins resting on upper chest. Respirations labored. Teeth poor. Pyorrhea present. *Heart* and *lungs* normal. *B. P.* 150/80. *Abdomen* tremendously distended. A long upper right rectus scar with a large hernia bulging from it; also a small umbilical hernia showing evidence of a sluggish infection in the umbilical fossa. Both herniae tense but not tender. Marked tenderness in the epigastrium and both lower quadrants. Generalized muscle spasm. During the examination the patient had intermittent pain. No audible peristalsis made out. *Rectal examination.* Prostate enlarged, but its consistency did not suggest malignancy. *Genitals, extremities, pupils* and *reflexes* normal.

Before operation *T.* 100.4°, *P.* 92, *R.* 28, *urine* and *blood* not recorded.

Operation was done at noon the day of admission. The patient was in very poor condition after it. The respirations were rapid, the pulse of poor quality. He voided only in small amounts. Enemata and pituitrin failed to relieve the distension or to give fecal results. The patient failed gradually. The distension and slight vomiting persisted. He presented the picture of uremia. June 8 there was some evidence of congestion in both lungs. The temperature rose to 102.8°, the respirations to 40. That day he died.

Discussion

BY DR. RICHARD C. CABOT

I should not think that the blood pressure was abnormal considering the diastolic measurement.

The scar was from the old operation three years before.

He has one of two things; the question is which,—intestinal obstruction or general peritonitis, or both. If intestinal obstruction we should naturally say it was the result of an old operation and the adhesions of that operation, which are the commonest of all causes for intestinal obstruction, except cancer.

A Physician: Could this be appendicitis?

Dr. Cabot: I do not know that we can rule it out.

A Physician: There are intermittent attacks of cramp-like pain.

Dr. Cabot: Cramp-like pains are much more like intestinal obstruction. They are like peristalsis, a regular occurrence. On the other hand they could not hear any peristalsis, perhaps because his abdomen was so thick. The acute onset, the pain, vomiting, tenderness, absolute constipation, will go either with intestinal obstruction or with peritonitis or with both. The diagnosis of obstruction which I shall make depends mostly on the history of a previous operation giving us a good cause for obstruction, and the absence of any history which would give us a cause for peritonitis. There is no previous disease of the appendix or other bad history unless we say gall-stone history, which ought to have been cleared up by the previous operation.

A Physician: Was his pulse rapid enough for peritonitis?

Dr. Cabot: No. I think that is a good point. We should expect a much more rapid pulse. I should expect it even with obstruction.

A Physician: Could it be an abscess of the liver?

Dr. Cabot: I think not. Unless it broke it would not have killed him. Abscess of the liver does not kill unless by a very chronic process with septicemia, or else by rupture into the abdominal cavity. And his illness was so short that I think we can rule that out.

A Physician: His passing no gas would be in favor of intestinal obstruction.

Dr. Cabot: Very possibly we have both: what we want to think of is, what came first. I think I should rather say very possibly obstruction with peritonitis on top.

DR. CABOT'S PRE-OPERATIVE DIAGNOSIS

Intestinal obstruction.

PRE-OPERATIVE DIAGNOSIS

Intestinal obstruction following hernia in scar.

OPERATION

The patient was an exceedingly obese man with very prominent distended abdomen with heavy fat walls. Under local anesthesia exploration was made in the cecal region. Hernia in scar found, and a collapsed loop of small intestine adherent to edge of hernial opening. A larger median incision then made under local anesthesia. Free fluid and distended congested loops of small intestine found. From this point the operation was continued under ether. The distended loop was followed down to a definite obstruction from a band attaching the loop to the edge of the hernial sac. This band was divided and gas passed immediately into the collapsed loop. Abdomen closed with some difficulty. The patient left the table in poor condition.

FURTHER DISCUSSION

They found no peritonitis.

We have no urine examination. It is perfectly possible that he had uremia besides. He did not come in for that.

Miss Painter: The urine on the 7th was clear and acid, with no albumin. It was insufficient to do specific gravity and sediment tests.

Dr. Cabot: So we have one record of no albumin in the urine.

DIFFERENTIAL DIAGNOSIS

Whether there is any terminal peritonitis or not is the only question. Peritonitis often does come after an operation of this sort. But the operation has proved the diagnosis to be essentially intestinal obstruction.

A Physician: Shouldn't we get peritonitis with obstruction of that long standing?

Dr. Cabot: I think it would be unusual—so short, you mean? It was only four days. He was operated on the day of admission and died the same day.

A Physician: Had he vomited fecal material?

Dr. Cabot: No. We do not get that in many of these cases unless they go on much longer.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Intestinal obstruction.
Operation, lysis of adhesions for intestinal obstruction.

DR. RICHARD C. CABOT'S DIAGNOSIS

Intestinal obstruction.
General peritonitis.

ANATOMICAL DIAGNOSIS

1. *Primary fatal lesions*

Ulcers of stomach with perforation.

2. *Secondary or terminal lesions*

General peritonitis.
Marked distension of the intestine.
Slight arteriosclerosis.
Slight hypertrophy and dilatation of the heart.
Fatty metamorphosis of the liver.
Fatty infiltration of the pancreas.

3. *Historical landmarks*

Operation wounds.
Chronic peritonitis in patches along a strip of the small intestine.
Chronic pericholecystitis.
Slight chronic pleuritis, left.
Slightly defective closure of the foramen ovale.

Dr. Richardson: The abdomen was enormously distended. The peritoneal cavity contained a moderate amount of purulent fluid. The peritoneum rather generally was coated with fibrinopurulent exudate. This exudate was in great amount in the upper right quadrant, where there were numerous old adhesions about the under surface of the liver, to the hepatic colon, along the lower end of the stomach and in the region of the head of the pancreas. These adhesions were infiltrated with purulent material. The adhesions also extended about the gall-bladder. There was a portion, at least, of the gall-bladder present, as a small sac. The wall was a little thickened and surrounded by the adhesions mentioned.

The intestines were enormously distended. At a point about midway there was a strip of the intestine which was a little more dilated than the portion above and below, and it was a little reddened. Scattered in various places along it were patches of reddish adhesions in one of which there was a row of sutures in the serosa. In another patch there was a fibrous stump which could very well have been the stump of an adhesion which had been separated. This strip apparently was the strip which the surgeon spoke of, and that portion of the operation was successful. The intestines were free at the time of necropsy.

The stomach was of moderate size. At a point five cm. above the pylorus there was a collection of ulcerations which practically extended around the wall. They were rather sharply outlined, somewhat punched out in appearance, and the margins descended to bases which were dirty blackish-red, and in places had thinned out to a necrotic veil. In this region there was a perforation. This was associated with the purulent infiltrated adhesions mentioned.

The rest of the anatomy has only a few points of interest. One is the heart. Here is a man who anatomically had only a small amount of arteriosclerosis, very good vessels for sixty, and normal kidneys; consequently no definite cause for heart hypertrophy. His heart weighed 650 grams. Of course some of that apparent enlargement is to be associated with the very great size of the man, and the hypertrophy and dilatation is to be regarded as slight. There was slight dilatation of the left, considerable on the right.

The lungs were negative. The tissue was a little leathery, dark reddish, a little bit atelectatic looking.

The liver was large, doughy,—fatty metamorphosis. The pancreas showed fatty infiltration, but was otherwise negative.

Dr. Cabot: In your opinion, Dr. Richardson, when this man began to be acutely sick and came in here, he came in because of that perforated ulcer?

Dr. Richardson: I think it is a difficult case to reason out exactly. How long ago was he operated on?

Dr. Cabot: Three years before.

Dr. Richardson: So that of course those adhesions had been established for some time, and at some point at this time he must have had evidences of intestinal obstruction. As to whether the distension associated with the obstruction broke the thin bases of the ulcerations I do not know.

Dr. Cabot: We shall not know I suppose. I am betting that we were wrong, that he had had some adhesions, had had these for three years, and got used to them. And then he had this perforated ulcer four days before he came here, which gave him pains and distension, and of course with all the distension these adhesions would give more trouble. My impression is that they did not find at operation the main thing he was suffering from, but merely a small complication.

Dr. Richardson: The surgeon does say definitely that he found there a band which was constricting the intestine and that he cut it.

Dr. Cabot: Gas passed in when he cut it, but I think that was secondary to the new peritonitis that he had.

A Physician: Why should they have found a peritonitis after four days?

Dr. Cabot: It developed further since the operation. How many hours was it between the operation and the necropsy?

Dr. Richardson: The necropsy was four hours after death.

Dr. Cabot: He had two days to develop the peritonitis. I do not believe there was general peritonitis at first. There was local which became general.

Dr. Richardson: He could not tell whether there was peritonitis at the time of operation. Just think what the surgeon was confronted with.

A Physician: Isn't it the rule that after perforation the pain in the stomach stops?

Dr. Cabot: The general pain often is much worse, extends as the peritonitis extends. After perforation the spreading of pain from spreading of peritonitis is what we expect.

A Physician: Pain is usually quiescent a few hours after perforation, particularly in appendicitis.

A Physician: If you had examined this heart before operation what should you have said about it? This brings up the question when to operate and when not.

Dr. Cabot: It was normal I guess. I do not believe he died on account of his heart, do you, Dr. Richardson?

Dr. Richardson: No.

Dr. Cabot: The question is asked whether in operations of the upper sigmoid we can get intestinal paresis or similar paralysis post-operative, especially when there has been much handling. Yes, certainly, usually in proportion to the amount of handling we get these paralyses.

A Physician: Wouldn't the heart of a man with this tremendous amount of surplus weight, doing hard labor, naturally be hypertrophied?

Dr. Cabot: It would be natural to say so. Yet the evidence is that people doing heavy work do not get big hearts. The Marathon runners and athletes do not get big hearts.

CASE 10412

An Armenian housewife of thirty-eight entered October 28 complaining of pain and swelling of the joints. She had been in America only six weeks and knew no English. The history was given by her husband.

F. H. Little known except that the husband, who had been in this country nine or ten years, had gonorrhea nine years ago.

Social History. Seven years ago she was driven from her home in Armenia to Syria, where she had done menial house labor in the interval.

P. H. She had always been healthy and able to work hard.

P. I. Two weeks before admission she felt chilly sensations. The next day her left elbow became painful and swollen. She perspired a great deal. She continued to do her household washing, etc. After four days the left elbow subsided and a similar process began in the right elbow, with more chilly sensations and sweating. After five days the pain, swelling and redness of the right elbow subsided. The right knee then became swollen and much more painful than the elbows, confining her to bed and keeping her awake. It pained not only on touch or motion but on the approach of anyone near the bed. Her appetite had diminished. Her bowels were very constipated. She had taken fluids freely, with frequent micturition. No history of sore throats or symptoms of a cold could be elicited.

P. E. A fairly well developed and nourished woman. On the face were many irregular scars and at the right commissure of the lips were radiating linear scars. Several teeth missing. Enamel chipped along margins of incisors. Slight pyorrhea. On the right shoulder a circle of pigmentation and superficial scarring. *Heart.* Apex impulse not found. Supracardiac dullness 7 cm., left border of dullness 10 cm., right border 3 cm., midclavicular measurement not recorded. *B. P.* 132/86. *Lungs* clear. *Abdomen* soft. Spleen easily felt. In the right epigastric region was a sense of mass and resistance, more marked on this side than on the other. It was questionable whether a vague mass could be palpated or whether this was the rectus muscle. The patient could not understand enough English to coöperate. *Pelvic examination.* Small urethral caruncle. Cervix long and low, with bilateral tear. Uterus somewhat retroflexed, normal in size. Moderate amount of creamy cervical discharge. *Extremities.* Right knee-joint region swollen and tender. No fluid demonstrable in joint. *Pupils* normal. *Reflexes.* Right knee-jerk not tried owing to pain in right knee. Both ankle-jerks active and equal.

Before operation *T.* 97.9°-101.5°, *P.* 82-111, *R.* normal, *urine,* ℥ 33-77, sp. gr. 1.014-1.020, cloudy at one of two examinations, a slight to a large trace of albumin at both, loaded with red blood corpuscles at the first; *renal function* 50%; *blood,* hgb. 90%-70%, leucocytes 22,600-22,400, polynuclears 67%, reds normal at the first examination, 4,630,000 at the second, slight anisocytosis. *Two Wassermanns* negative. *Nonprotein nitrogen* 27.3 mgm. *Stools.* Guaiac negative at two of six examinations. Very sour at the last. Taenia saginata at one and ascaris lumbricoides at another. Slight fermentation at two. Urethral and cervical smears negative for gonococcus. *Knee tap.* 50 c.c. of white thin pus which clotted in lumps. Microscopic examination showed polymorphonuclears, no organisms. *X-ray.* Patient unable to stand. Heart plate not taken. *Orthopedic consultation.* The history is like a Neisser arthritis, monarticular. The clinical findings are not so characteristic of this. Would suggest a plaster cast with knee as straight as possible, also aspiration for diagnosis. *Culture from pus from knee* negative.

November 10 operation was done. The patient was not in good condition after it. A Wassermann was negative. November 15 the stitches were partially removed from the skin, allowing it to gape. There was slight discharge. A culture showed a profuse growth of staphylococci. During the next two days there was no improvement. Rectal glucose was helpful. A medical consultant reported, "Sepsis, not explained entirely by septic knee joint. Patient now has very large liver, below the level of the navel, somewhat tender. The rapid enlargement of this organ since the previous examination suggests strongly the possibility of liver abscess. Lungs clear." A surgical consultant reported, "Liver enlarged, but I see no evidence of abscess. The condition of the knee-joint would account for the temperature. Suggest thorough drainage of knee-joint."

November 18 the capsule was opened with scissors and considerable creamy pus discharged. Under novocain a stab wound was made into the suprapatellar pouch on the outer side of the knee, allowing through and through drainage. Dakin tubes were inserted. November 21 the patient was much better, and the temperature was subsiding. She continued to improve and ate well, though she remained stuporous. November 25 the leucocyte count was 53,000. A throat consultant reported, "Mucous membranes of mouth and pharynx very dry throughout. Numerous superficial ulcerations of the palate of varying size, the largest about 2 cm. in diameter on the left side of the soft palate. The condition suggests trophic disturbances rather than active infection. Advise hourly mouth wash, boric acid 2% in glycerin and water equal parts."

The patient failed slowly but steadily, and November 27 died.

Discussion

BY DR. LLOYD T. BROWN

This patient was seen in consultation with a medical man, who gave the history as stated above. It was also stated that the patient had been an Armenian refugee and had suffered terrible hardships and hunger for many months. The picture was that of an acute Neisser infection or an infectious arthritis of unknown origin which had settled finally in one knee. Because of the extreme pain and localization in one joint, with the possibility of there being a gonorrheal focus, an arthrotomy was advised with the hope that washing out the knee with very hot salt solution would tend to clear up the local condition. The question of a focal condition in the vaginal tract was considered, but nothing definite was found. The only possible reason for considering this a gonorrheal arthritis was the fact that the patient had been in this country only four weeks before she began to have symptoms of arthritis and that her husband gave a history of having had a gonorrheal infection nine years before. There was no evidence shown in the history that the husband's infection was active, but it was felt that that possibility should be considered.

PRE-OPERATIVE DIAGNOSIS

Septic knee.

OPERATION

Ether. Lateral incision on inner side of knee. Aponeurosis open. Capsule very thick and porky. Joint opened, with the escape of a large amount of cloudy serous fluid and two very large fairly newly formed fibrin clots. The finger was put down into the joint feeling many very small adhesions, which were broken up. The joint was washed out with two quarts of hot salt solution and the wound sewed up in layers as much as possible, with chromic catgut and silk to the skin.

BACTERIOLOGICAL REPORT

Culture of pus from knee joint showed streptococci and other bacteria.

Further Discussion

The post-operative course was most unusual, the temperature rising to 104.5° on the seventh day. Because of this the wound was opened again with the discharge of purulent fluid. After this the temperature dropped down and the patient rapidly failed.

On looking backward over this case the important points are as follows: The woman had only just come from years of terrible persecution and starvation and was in an exceptionally run down condition. The acute joint condition, which seemed like joint infection with pus rather than the usual arthritic condition, made it seem wise to operate in spite of the above mentioned poor condition. The fatal result was undoubtedly due to septicemia and was undoubtedly hastened by the operation, as it spread through a system unable to cope with it. Whether at another time a similar operation would be done is a question, but with the picture as it was the operation seems to have been justified.

CLINICAL DIAGNOSIS (FROM HOSPITAL RECORD)

Arthritis.
Acute polyarthritis.
Pyemia.
Operation, incision to drain right knee.

DR. LLOYD T. BROWN'S DIAGNOSIS

Infectious polyarthritis, streptococcus.
Septicemia, streptococcus.

ANATOMICAL DIAGNOSIS

Arthritis of the knee.
Purulent pyelitis.
Amyloid nephritis.
Amyloid infiltration of the liver and spleen.
Chronic perihepatitis.

Dr. Richardson: The examination was made through a restricted incision in the abdominal wall. The head was not examined.

The right leg was swollen and pitted slightly on pressure.

There was no fluid in the pleural cavities, and the lungs to the touch were negative. The heart was outwardly negative.

The liver was large, estimated to be 2,500 grams. The surface generally was smooth, but presented a few old adhesions to the diaphragm. The tissue showed some increase of consistence and was dull brownish red and rather homogeneous.

The spleen weighed 575 grams, much enlarged. The capsule was smooth. The tissue showed increase of consistence. The section surfaces were mahogany brown, rather homogeneous, and somewhat lardaceous to the touch.

The kidneys were moderately enlarged. The capsules stripped, leaving smooth pale brownish surfaces. The tissue was plump, rather wet, with very wide cortex, 8-12 mm. The section surfaces were pale brown to brown-red with injection of the vessels in places. The markings were fairly clear. In each pelvis there was reddening and roughening of the mucosa, and each cavity contained much frank yellow pus.

The liver and spleen showed amyloid infiltration, and the kidneys a moderately well marked amyloid infiltration. There was no definite atrophy of the kidney tissue.

Further examination was restricted.

CASE 10413

First entry. An unmarried Irish caterer and cook of fifty entered November 4.

F. H. Good.

P. H. She had always been very well. She had always wanted to sleep on three or four pillows. At seventeen she was in bed four weeks with rheumatism—fever and swollen joints. Seven years before admission she crushed her right hand in a dumb waiter. After this accident she came to this hospital for Zander treatment for a year and a half. She had rare headaches, head colds and sore throats. For seven years she had used glasses for reading. She had rare urination at night until the present illness, when fluids had been forced. Her bowels had been constipated. She passed the menopause five years ago.

Habits. She had taken many drugs. During her stay in the hospital it was found that morphia was smuggled in to her.

P. I. Seven years ago, when she did not do well after the injury to her hand, her urine was found to contain sugar. She was put on a strict diet for a year and a half, during which time she was sugar free and felt very well. Since that time she had avoided carbohydrates, but had not had her urine tested. In March, eight months before admission, a bunion at the base of her right great toe became sore and was opened with discharge of pus. Her urine was found to contain sugar. She was put on a strict vegetable diet and became sugar free again, losing thirty pounds. The toe improved, but was still discharging a little pus when she left the hospital five weeks later. Since that time she had been on a diet of low carbohydrate vegetables, meat and eggs. Her urine had been tested frequently and had been sugar free all the time. The skin about the bunion became hard and leathery. A doctor operated upon it twice, cleaning up all the dead tissue. This did not cure. The entire toe became affected, requiring amputation five weeks before admission. The wound did not heal, and had had a drain in it off and on. For the past two or three days she had had some fever.

P. E. Emaciated. Somewhat drowsy. No marked acetone breath. Tinea versicolor and senile keratosis over chest. Left sclera slightly injected. Mouth parched. Sordes. Tongue red, dry, deeply fissured. Throat dirty, dry and injected. Tonsils not well seen. *Lungs.* Slightly harsh bronchial breathing near the left apex in front. No râles. *Heart.* Apex impulse in the fifth space 10 cm. to the left. No increase to percussion. Sounds and action normal. A systolic murmur over the apex and the base. Pulses normal. Artery walls just palpable. Brachials tortuous. *B. P.* 145/90. Abdomen normal. Right kidney felt, enlarged. *Genitals* and *rectal examination* not done. *Extremities.* Right middle toe black and gangrenous. Great toe amputated, with purulent discharge. *Reflexes.* Left knee-jerk greater than right.

Before operation *T.* 99.3°-101.5°, *P.* 100-125, *R.* 21-29; *urine,* ℥ 21-29, sp. gr. 1.015-1.018, cloudy at one of two examinations, the slightest possible trace at one, sugar 0.99%-2.4%, diacetic acid positive to very strongly positive; *renal function* 50%; *blood,* hgb. 60%, leucocytes 26,200-38,800, polynuclears 87%, reds 4,792,000, moderate variation in size, occasional polychromatophilia. *Blood sugar* 0.22%. CO_2 53 volumes per cent. *Mariott* 25-30.

November 7 operation was done. The patient showed no shock after it, and the chart was flat. There was very little drainage from the stump. November 14 an abscess of the buttock was incised and drained. November 16 the blood sugar was a little high. The diet was withheld for a day. November 27 the stump showed two moist areas, one surrounded by a small slough. A carbuncle on the buttock was opened under gas. This cleared up well, the stump more slowly. December 16 she was discharged to a hospital for chronic cases.

History of Interval. She remained in the chronic hospital for nearly two years. While there her urine was found to contain sugar several times. An artificial leg was fitted at the hospital. This irritated the stump and caused inflammation, which cleared up in two weeks. She was discharged from the hospital because she was able to go about without trouble.

Early in December, two years after the last discharge, she was knocked down by a taxicab and fell on her left foot. The left great toe was sore. She reported to the Out-Patient Department of this hospital. The records show a visit January 4, when a tender swelling on the left great toe of a month's duration was opened. There was slight serous discharge from a bunion. She was sent to the Diabetic Clinic, where a poor prognosis for the left foot was made and it was said that she should be in the wards. January 15 the foot was found in about the same condition. A trace of sugar was found in the urine. She remained at home, walking on her foot. Early in April she slipped, and her crutch came down hard on the middle toe of the left foot, injuring it quite severely. After this the foot was very sore and caused a great deal of pain. Her general condition had been very good, though she thought she had lost some weight. She examined her urine and had not found sugar at any time.

Second entry. May 12, four months after the last mentioned visit to the Out-Patient Department.

P. E. A poorly nourished woman with dry skin, showing marked loss of weight. *Heart* action irregular, usually every fourth beat, probably extrasystole. Markedly loud and well transmitted systolic murmur at the apex heard over the entire precordia and also on the right side of the chest, particularly prominent over aortic area. *Lungs* and *abdomen* not remarkable. *Extremities.* Right leg missing. Amputation stump at hip. Left leg emaciated. Dorsalis pedis not obtained. Two diabetic ulcerations, one at the base of the great toe, one at the end of the second toe including the nail. These had been kept dry. *Pupils* reacted sluggishly to light. *Knee-jerks* not examined.

Before operation *T.* 97.6°-101°, *P.* 63-107, *R.* 18-26; *urine,* 250-2900 c.c., sp. gr. 1.004-1.024, acetone positive to very strongly positive at nineteen of twenty examinations, ferric chloride positive at ten, sugar at seven; *blood,* hgb. 80%, leucocytes 9,400-29,600, polynuclears 66%, reds and platelets normal. *Wassermann* negative. *Non-protein nitrogen* 19.8 mgm. *Consultation, first surgeon.* "Elevation. Dry heat (cradle with electric light to 110° F.) Diabetic diet. Alternate moist (boric solution) dressings with dry (aristol). If pain continues sufficient to warrant morphia at night sympathectomy might be tried. Success very slight. Probably will have amputation in a few months even if this attack clears up." *Consultation, second surgeon.* "As patient is unwilling to have amputation would suggest another consultation with first surgeon about operation for relief of pain." *Diabetic consultant.* "She will of course lose her leg. Advise X-ray to determine presence of osteomyelitis and condition of arteries above the ankle. If no osteomyelitis is present she might conceivably go for months with drainage and poultices. In the meantime the Social Service can arrange for her ultimate disposal. We have found opium suppositories for pain to be the most efficacious. The Alpine lamp also often relieves the pain." *X-ray.* Bones of the foot and leg showed marked decalcification. No evidence of osteomyelitis. Blood vessels appeared to be calcified well above the popliteal space, the plate including no more of the vessels. *Consultation, third surgeon.* "Advise thigh amputation."

Orders. May 12. Diabetic régime. Force fluids. Aristol powder to diabetic ulcerations. Keep foot warm with hot water bottle. Codeia gr. ½ every three hours p.r.n. May 13. Codeia gr. ss. Pyramidon gr. x every three hours p.r.n. for pain. May 14. Pyramidon gr. x. May 15. Nitroglycerin gr. 1/100 every hour from 8 to 12 p. m. Digitalis gr. 1½ twice a day. May 16. Nitroglycerin gr. 1/250 four times a day. May 17. Aspirin gr. x three times a day. Codeia gr. ⅛ by mouth, repeat once if necessary for severe pain. (Not given.) May 18. Veronal gr. x with pyramidon gr. v. Codeia gr. ⅛ by mouth. Opium suppository gr. i one hour later if not relieved. The later orders are for opium suppositories, morphia, codeia and pyramidon, with warm boric compresses to the foot May 19. May 30 insulin was started, 5 units t.i.d., changed June 1 to 10 units t.i.d. June 4 the order was made 10 units at 8 a. m. with six ounces of orange juice. June 5 insulin 10 units t.i.d.

June 4 operation was done. June 6 the two rubber drains were removed. The wound was clean and healed well. June 20 all insulin was omitted. The blood sugar was tending downward. The general condition was good. The diabetes was well controlled without insulin. June 23 the stump was well healed and she was discharged.

LATER NOTES FROM OUT-PATIENT DEPARTMENT RECORD

June 27 the incision was clean. At the Diabetic Clinic it was found that the urine showed no sugar or diacetic acid on a diet of carbohydrate 50, protein 50, fat 100. The blood sugar was .152. She felt fairly well. July 8 the blood sugar was .134. July 15 the blood pressure was 148. There was no sugar or diacetic acid on a diet of carbohydrate 50, protein 52, fat 136. July 22 the stump was crusted, no discharge. She had some pain, especially at night. July 29 the urine was still negative on a diet of carbohydrate 50, protein 46, fat 105.

DISCUSSION

BY DR. EDWARD L. YOUNG, JR.

The story of rheumatic fever, swollen joints, and three or four pillows at night raises the question as to whether she has not got a somewhat damaged heart which may be important in her present illness.

I think it is of interest that a number of patients first discover that they have sugar in the urine when they are being examined for some other condition. Some of these are fairly advanced cases. In this woman's case, however, it was apparently still a mild disease. At the time she had her bunion treated, however, she was known to have diabetes, although she had not paid very much attention to it, and that fact makes any operation on her foot a major operation. By that I mean that there is more risk to it than there is in a major abdominal operation under normal conditions because of the possible sequelae. With her the bunion had already become infected, and although it improved on dietary treatment it refused to heal and finally went to the point where the toe itself was amputated.

There are several points that this brings up for discussion. One of the most debatable is the amount of surgery that is necessary when this destructive process in the extremities once starts. There are two types of trouble, not of course distinct, but nevertheless to be considered in determination of extent of treatment. The first is the amount of arteriosclerotic change in the foot. If gangrene is due to obliterating endarteritis then any attempt at low amputation, such as the removal of a toe, is pretty sure to be a failure. Further operation will generally be necessary, and a primary operation as high up as is necessary to give good blood supply will give the quickest and best result. On the other hand where with a fairly good blood supply, and generally as a result of trauma, there is a damaged toe with some sepsis, it will often happen that careful medical treatment such as rest, elevation, warmth, and drainage of the septic area with perhaps the amputation of one or two toes will work wonders and result in complete cure. In this case half hearted treatment did not work, and when she is admitted her general condition is poor, her blood sugar is high, and there is considerable sugar in the urine. We are not told about the apparent blood supply of the foot, but there is obvious spreading gangrene with a septic amputation stump of the great toe. Today a blood culture done before operation would have helped on the prognosis, even though the treatment would have been exactly the same, because it often happens that in cases with slight sepsis blood culture shows a positive growth and the prognosis is then generally fatal. Sometimes in cases of extensive sepsis where the outlook is much worse clinically the blood culture is negative, and that patient may recover.

The operation in this case was certainly an amputation, at what point I do not know. From the story we have no means of estimating accurately the behavior of an amputation below the knee, and if the apparent blood supply was poor an amputation above the knee is probably the operation of choice. The question of anesthesia is important. Ether carries a decidedly greater risk. This risk is not prohibitive, and in cases where there has been careful preparation ether can be used, but gas-oxygen, or in case of an amputation spinal is the anesthesia of election.

The pre-operative preparation is of the greatest importance and should be in the hands of a competent medical man,—an excess of fluids, and for twenty-four hours before operation an excess of carbohydrates in an easily assimilable form. Today of course the use of insulin is the most important means of controlling the reaction from the anesthetic. Surgery in diabetes consists mostly in competent medical treatment, good judgment as to the time of operation, and well chosen anesthesia, well given. The surgeon himself had best make himself a technician and leave the most important part of the treatment to the medical diabetic specialist.

DR. YOUNG'S PRE-OPERATIVE DIAGNOSIS

Diabetic gangrene of foot.

PRE-OPERATIVE DIAGNOSIS

Gangrene of foot, diabetic.

OPERATION, FIRST ENTRY

Spinal novol. Circular amputation of right thigh. No muscle flaps. Nerves divided high. No alcohol injection. Flaps closed.

PATHOLOGICAL REPORT

A thigh amputated at the point of election for gangrene of the foot. The popliteal artery is cord-like. Microscopic examination of a section from the artery shows thickening and degeneration of the wall. The lumen contains an organizing thrombus.

Endarteritis.

Further Discussion

In this case amputation was done above the knee and examination of the blood vessels afterwards showed marked endarteritis, so that the surgical judgment was right. The anesthesia was spinal, so this woman had according to our standards the best judgment and best anesthetic possible.

Her behavior after operation was good, and she was discharged in good condition.

The irritation caused by the artificial leg is of course in keeping with a stump with only moderately good circulation. It is interesting that the injury to the other foot which brings her back is the result of an accident. Here again, however slight the operation on her foot it should be considered a major operation. This was the opinion of the Diabetic Clinic.

Her second entry shows that she has been going downhill somewhat, but on the whole is in pretty good condition. This time we are told that no blood supply can be found in the foot, and this time she has apparently kept the ulcerations dry and clean. The non-protein nitrogen is normal. We are not told what her blood sugar is. If we did not know that she had had marked endarteritis of the other leg, and according to X-ray the same condition here, we might believe that this attack would quiet down with careful treatment. But with the evidence that we have at hand the action advised by the third surgeon would seem to be the only thing worth doing.

This was accordingly done about three weeks after her admission. The preliminary orders are the preparation with the insulin started four days before operation, the orange juice and forced fluids. I do not see anything else to do here but a thigh amputation under spinal anesthesia.

PRE-OPERATIVE DIAGNOSIS

Diabetic gangrene.

OPERATION, SECOND ENTRY

Gas and oxygen. Amputation of left leg at midthigh.

PATHOLOGICAL REPORT

The thigh is amputated at the lower and middle thirds for gangrene of the foot. The femoral artery is calcified and thrombosed. Microscopic examination shows its lumen filled with a fibrous thrombus. The walls are extensively degenerated.

Thrombosis.
Arteriosclerosis.

Further Discussion

Again the examination of the vessels shows extensive damage, so that any lower amputation would almost surely have failed to heal.

Following operation she did well, and as is often true in these cases, did better after the diseased foot was removed than she had been able to do before. This demonstrates very well what can be done with careful medical treatment, pre-operative preparation, accurate anesthesia, and good judgment as to place of operation and operative care.

DIAGNOSIS

Diabetes mellitus.
Diabetic gangrene of right foot.
Amputation of right thigh.
Diabetic gangrene of left foot.
Amputation of left leg at midthigh.

BOOK REVIEWS

How Our Bodies Are Made. By R. M. Wilson, M.B., Ch.B. Published by Henry Frowde and Hodder & Stoughton, London. 246 pages.

Very few writers on scientific subjects are able to present these subjects in a style that is really appropriate for children. The author of "How Our Bodies Are Made" has this unusual gift, and in his fascinating little book he conveys a surprising amount of sound physiological teaching. He does this by frequent use of simple illustrations and by the dramatization of physiological processes. Air, for example, he represents as aeroplanes entering the respiratory passages; food he represents by little boats; infection is pictured as an attack upon the body made by little black devils with spears, opposed by fleets of submarines. At first glance the book appears childish, but one does not have to read far to realize that the author understands his physiology and that he is giving a really accurate and reasonably complete exposition of its processes.

Handbook on Skin Diseases. By Frederick Gardiner, M.D., B.Sc. (Public Health), F.R.C.S.E., F.R. S.E., Lecturer on Skin Diseases, University of Edinburgh; Physician for Diseases of the Skin, Royal Infirmary, Edinburgh. Second Edition. Octavo, 246 pages; 46 illustrations, 12 colored plates. Edinburgh: E. & S. Livingstone. 1924. Price, $3.50.

A very small book giving a concise account of most of the common skin diseases, and some of the less usual ones, with simple directions applicable to the less refractory cases. There are 46 cuts, and 12 colored plates from plaster models. It is a book which should be very helpful to the general practitioner who wishes to recognize and treat simple dermatoses. It seems that syphilis is passed over with scant consideration for such an extremely important and varied disease.

Epidemic Encephalitis. By Arthur J. Hall, M.A., M.D. New York: William Wood & Co. 1924.

In seven years, since the first cases of this extraordinary disease were reported by von Economo, the literature has assumed prodigious proportions. Dr. Hall lists 2056 references in his bibliography, covering the period up to the end of 1923, nearly one-third of his book of 230 pages. Such a very large amount of medical writings could only be stimulated, even in these times of relatively easy publication, by a new and unusual disease, appearing in many parts of the world in a slow march of epidemic character, and leaving behind the acute stages a trail of severe sequelae.

The appearance of this book is timely. Many cases with late residual manifestations, especially if the acute stage passed practically unnoticed, as it often does, are now appearing in our clinics without diagnosis. Dr. Hall estimates that 50 per cent. of all cases have residua, one-half of these showing some degree of Parkinsoism. Because of its prevalence it would seem worth while to quote Dr. Hall's final opinion:

"It (epidemic encephalitis) has the characteristics of an epidemic disease; its mortality is high; its infectivity usually low, but of long duration; it has so far shown a predilection for the later winter months; it affects all ages, and both sexes; the site of entry appears to be the nasopharynx; the incubation period is uncertain, from a few days to a week or two; the onset may be sudden or gradual; the course is at first acute, later chronic, and is characterized throughout by its tendency to proceed by 'shoves'; it is distinguished from all other known infections by the numerous, peculiar, and often long-delayed after-effects.

"Its chief activity is upon the central nervous system; the location of this and the resulting effects are pathologically characteristic; a virus has been obtained from the nervous tissue and nasopharyngeal mucosa of those suffering from the disease; a virus having similar properties has also been obtained from the mouth of a healthy contact; these bear a close relation to the virus of herpes febrilis. 'Minute bodies' have been found in the tissues, the exact significance of which remains to be seen.

"Upon these grounds the existence of a distinct clinical and pathological entity has been assumed. What its epidemiological relationship may be to other partners in the epidemic waves is a matter for future ages to explain.

"The evidence as to the real value of any of the many methods of treatment advocated is difficult to estimate in a disease the natural progress of which is so extremely irregular. The verdict on the whole is that, at present, any reliable therapeusis, either for the disease itself or for its many after-results, does not exist." (Page 154.)

Dr. Hall, who is professor of medicine at the University of Sheffield, has written the best summary of our knowledge of this disease that has come to the reviewer's attention. The book is clearly written, relatively brief, comprehensive and accurate. It is a very useful book, and so well arranged that facts can be found readily and references quickly discovered. The few illustrations add greatly to its value.

Psycho-Analysts Analyzed. By P. McBride, M.D., F.R.C.P.E., F.R.S.E. London: William Heinemann. 1924. Pp. 142.

All attempts at a destructive criticism of psychoanalysis have been failures and this volume is no exception. For when a writer endeavors to demonstrate what he conceives to be the absurdities of psychoanalytic theories and practice, he either shows his own ignorance of the science or betrays his own emotional resistances toward certain of its fundamental considerations. This has become so true as to be almost axiomatic. For those who favor psychoanalysis, this book provides an evening's entertainment, and for those who oppose it, it will act as a conversion. In fact, after reading the volume, one is reminded of the words of Pasteur, in reply to those who opposed his destructive demonstration of spontaneous generation, "No constructive criticism, merely superannuated opinions." He who denies the principles of psychoanalysis is in the position of those misguided fundamentalists who refuse to accept the facts of organic evolution.

Throughout the volume, psychoanalysis is continually and erroneously cited as a "cult," and Dr. Donkin in his Introduction refers to the many instances of harm done by psychoanalysis and then naively adds, "Of course I am unable to verify openly any statements I make on this subject." It might be of interest to briefly mention a few of the many errors and misstatements which are crowded into this book. In the phalanx of authorities in neurology who do not accept the concept of the unconscious, the author has very conveniently omitted the name of Henry Head, who, after years of research in organic neurology, finally stated: "We have shown that the forms assumed by the aspects of sensation are ordered and predestined on the physiological level, as the result of innumerable integrations, which take place outside consciousness. These processes are not open to conscious analysis; it is only the interplay of sensations that can be discovered by introspection."

The author revives the discarded theory of the ameboid movements of the neurones and produces an incongruous mixture of this with Kapper's conception of neuro-biotaxis. He seems to be unaware that a statistical proof of psychoanalytic therapy, for which he pleads, was published some years ago (*Psychoanalytic Review*, Vol. IV, No. 2, 1917), and in addition he makes the error of confusing the latent content of the dream with the analyst's interpretation, instead of the free associations of the dreamer. Neither does he seem to realize that the chief aim of psychoanalysis is the analysis of the transference manifestations and not a free emotional catharsis. So naive is the author that he very inconsiderately records some of his own dreams, to prove their "meaningless content." Their interpretation is so clear to any analyst that we should like to ask why, in dream IV, does he bring illness upon his "great friend," who is also a physician? Why, indeed?

◆

CURRENT LITERATURE

ABSTRACTORS

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A Clinical Study of Hypernephroma

Cutler, M. (*Johns Hopkins Hospital Bulletin*, July, 1924), presents an interesting study of the general subject of hypernephroma, summarizing his remarks as follows:

1. A clinical study was made of 32 cases of hypernephroma of the kidney. In all the cases the diagnosis was confirmed by microscopic examination of tissue removed at operation.
2. Hypernephroma occurred most commonly between the ages of 50 and 60. The youngest patient was 37 and the oldest 67 years old.
3. Hypernephroma occurred twice as often in the male as in the female.
4. Hypernephroma involved both kidneys with equal frequency.
5. Injury was mentioned as a possible inciting factor in 10 per cent. of the cases.
6. The average duration of symptoms from the time of appearance of the initial symptom to the time of operation was three and one-half years.
7. Hematuria was by far the commonest symptom. Gross hematuria occurred in 81 per cent. of the cases; microscopic hematuria in 94 per cent.
8. Hematuria was the initial symptom in 68 per cent. of the cases.
9. The initial hematuria commonly followed some form of overexertion; it was usually profuse, intermittent, and irregular.
10. The presence of either gross, microscopic, or chemical hematuria is practically essential for the diagnosis of hypernephroma. Only those rare cases in which the renal tumor occupied the cortex of the kidney and was well away from the renal pelvis produced no hematuria.
11. Pain, which was the second commonest symptom, was present in 91 per cent. of the cases.
12. Renal colic was present in two-thirds of the cases. The colic was less severe than that due to renal stone and was usually associated with the passage of wormlike clots. The passage of wormlike clots associated with renal colic should, therefore, arouse the suspicion of kidney tumor.
13. Dysuria and urinary retention occurred in 25 per cent. of the cases.
14. Frequency of urination is rare. It occurred in only 12 per cent. of the cases.
15. A tumor mass was palpated on physical examination in 80 per cent. of the cases.
16. Constitutional symptoms, consisting of weakness, general malaise, dyspnoea and loss of weight, were present in 60 per cent. of the cases.
17. The blood findings are those of a secondary anemia of varying degree. The white blood counts were practically normal throughout the series.
18. The total phthalein excretion was but slightly impaired.
19. There is a definite impairment of kidney function in the diseased kidney, as indicated by the diminished phthalein excretion on the affected side.
20. In 75 per cent. of the cases there was an elevation of temperature of 99° F. or above.
21. The diagnosis of hypernephroma is based chiefly on the history of hematuria and pain, palpation of a mass in the kidney region, unilateral hematuria as indicated by cystoscopic examination, diminished kidney functions on the affected side, and the presence of a distorted kidney pelvis, as revealed by pyelography.
22. Of all the patients operated on, two failed to survive the operation, and four more died in the hospital. Four are known to have died since leaving the hospital at intervals varying between one and three years. Eight are known to be living at intervals of eight months to nine years, and fourteen could not be traced.

[J. B. H.]

On the Effect of Heat and Cold on Amoebocyte Tissue of Limulus

Loeb, L., and Drake, D. (*Journal of Medical Research*, June, 1924), used the amoebocyte blood cells of limulus to study the effect of heat and cold on cell activity. The experiments were performed in vitro with graded intensities of heat. Within the normal range of temperature an increase causes not only increased normal activity of the amoebocytes but an increase in intensity of secondary reactions potentially injurious to the cells. The authors believe this may explain the observation that increase of temperature in living organisms generally shortens life to the same extent that it increases the intensity of metabolism.

[S. W.]

The Relations of Age to the Size of the Heart

Bell, E. T., and Hartzell, T. B. (*Journal of Medical Research*, June, 1924). This study is based on the post-mortem records of 2071 cases (1529 males, 542 females) from 21 to 90 years of age. When all cases of diseases in which cardiac hypertrophy might conceivably be produced are eliminated, the increase is found to be slight, no more than could be accounted for by the increase in body weight so common from the third decade on. The increase in the average size of all the hearts observed from persons over 40 was largely due to hyperpiesia.

The age increase in systolic blood pressure is probably due to (1) increased body weight; (2) the inclusion of cases of hyperpiesia.

[S. W.]

Diabetes and Insulin

Sansum, Blatherwick, Smith, Long, Maxwell, McCarty and Cryst (*Jour. Metabolic Research*, 3:641, May-June, 1923—actually received April 7, 1924). From the time these authors began (May, 1922) treating patients with their own manufacture of insulin until they wrote this report (June, 1923), the Potter Memorial Clinic admitted 250 diabetics, of whom 150, i. e., 60 per cent., seemed severe enough to warrant use of insulin. (This high percentage suggests either (1) that their fraction of children, 14 per cent., was larger than usual in diabetic practice elsewhere; or (2) that their proportion of very severe cases was unusual; or (3) that they accepted less severe cases as needing insulin than have some others. The second explanation appears to be theirs.) Their insulin was mostly made at the clinic, partly obtained from Lilly. The latter product was found to exhibit a very constant "patient value," approximating 0.85 g. per unit of the H20 (also U-20) strength; i. e., 1 c.c. metabolizes 17 g. glucose-formers or "G" (100 C + 0.58 P + 0.1 F) in the diet. This sugar-utilizing power appeared *not* to vary appreciably with severity, nor with age, weight, low or high diets. They advocate expressing dosage in terms of G instead of units. Adjustment of the dose was examined in an interesting manner, with the conclusion that in the majority of patients, with an equal distribution of the food between the three meals, five-eighths should be given (within about half an hour) before breakfast and three-eighths before supper. (Same practice still followed September, 1924.) The average daily amount was 54 Toronto units, on about 2300 calories.

"Growths in natural tolerance have been observed in almost every patient who has been treated for a sufficient length of time. In one instance such a growth did not occur until the patient had been under treatment for nearly one year." Better growths with diet plus insulin than with diet alone.

No anaphylactic reactions.

One of the dramatic features of insulin, rather overshadowed by coma and children, is the cure of ravenous tuberculosis. This aspect is handsomely emphasized by their patient No. 10, whose cavities healed, sputum disappeared, and weight increased 51 pounds, and who is now earning his living as an automobile salesman.

A detailed report in columns of the figures for diets, etc., on the 100 cases is provided.

[H. G.]

Old (Petren) vs. New (Allen-Sherrill) Treatment of Diabetes

Heiberg of Copenhagen (*Jour. Metabolic Research*, 3:641, May-June, 1923, p. 677) has culled from these representative authors cases occurring between ages 11 and 30 and coming under treatment within the first year of the disease; he then calculated the death rate within the first year of observation: in the one series 54 per cent. vs. only 9 per cent. in Allen and Sherrill's series.

[H. G.]

Fat Ration and Tuberculosis

Davis of the University of Wisconsin (*Jour. Metabolic Research*, 3:641, May-June, 1923, p. 725) concluded from a study of guinea pigs that *skimmed* milk had a *more* beneficial effect than whole milk.

[H. G.]

X-Rays and Metabolism

Barreto at Hopkins (*Jour. Metabolic Research*, 3:641, May-June, 1923, p. 737) found that moderate doses were followed by a marked, though short-lasting, increase in the rate of oxygen consumption.

[H. G.]

Urinary Diastase

Cameron at Melbourne (*Jour. Metabolic Research*, 3:641, May-June, 1923, p. 753) found this value generally subnormal in kidney disease, subnormal or normal in diabetes and in cancer of the pancreas, but greatly increased above normal in inflammatory conditions of the pancreas.

[H. G.]

N. P. N. and Blood-Pressure in Relation to Heart and Kidney Lesions

Floyd of New York (*Jour. Metabolic Research*, 3:641, May-June, 1923, p. 759) has tabulated his findings in 50 autopsies. He notes particularly the association of high N. P. N. with increased kidney stroma (connective tissue), and high B. P. with thickened renal arteries.

[H. G.]

Acidosis and Fat-Intoxication in Diabetes

Allen (*Jour. Metabolic Research*, 3:641, May-June, 1923, p. 775) shows that dogs fed on diets high in fat, not balanced with enough other foods, develop, first, indigestion, and, later, fat-intoxication, skin eruption, loss of hair, ataxia, twitchings, even convulsions. "This intoxication is independent of both acidosis and diabetes," hence ketosis is not the only harmful consideration in connection with high fat feeding.

[H. G.]

Gas Analysis

Carpenter (*Jour. Metabolic Research*, 4:1, July-August, 1923) describes a new apparatus.

[H. G.]

Diabetic Coma

Bock, Field and **Adair** (*Jour. Metabolic Research*, 4:1, July-August, 1923, p. 27) go into the acid-base equilibrium in five cases, with the CO_2 diagram of Haggard and Henderson, which they claim to be as readily interpreted as a temperature chart. All the patients recovered, whereas among 68 previous comas in the same hospital only one recovered. They administered insulin in doses of about 10 units an hour for the first eight hours, then about 40 units a day for the ensuing two days, together with about one gram CH for each unit, testing the urine frequently to make sure that a small amount of sugar excess was constantly present. Soda they advocate as a routine because of the now known frequency of considerable amounts of unidentified organic but nonketone acids; they were well satisfied with Stillman's regime: 3 grams in a tumbler of water q1h. The great aid of blood analyses, and many other interesting points, are illustrated by abundant diagrams and tabular summaries.

[H. G.]

Thypars

Hammett (*Jour. Metabolic Research*, 4:1, July-August, 1923, p. 65) studied thyro-parathyroidectomized rats and concluded that thyroid deficiency tends to anhydremia, and that parathyroid deficit causes a disturbance in the nature of the refractive substances in the blood serum.

[H. G.]

Insulin

Dubin and **Corbitt** (*Jour. Metabolic Research*, 4:1, July-August, 1923, p. 89) show that vegetables contain a blood-sugar-increasing substance as well as an hypoglycemia-producing principle, and decline to commit themselves as to identity of the latter with insulin, "since we do not know what insulin is." Oddly enough red beets and carrots contain only the sugar-raising agent. With the other vegetable extracts, cabbage, celery, lettuce, spinach, "delayed and prolonged" action described by other investigators may be due to the counter-effect of the sugar-increasing substance.

[H. G.]

Metabolism in Beriberi

Fleming *(Jour. Metabolic Research,* 4:1, July-August, 1923, p. 105) found in two groups of Filipinos, one with beriberi, one convalescing from surgery, no material peculiarities in B. M. R., R. Q., or blood chemistry.

[H. G.]

Anaphylaxis in the White Rat

Parker, J. T., and Parker, F., Jr. *(Journal of Medical Research,* March, 1924), show that the supposed insusceptibility of the white rat does not exist. By careful experiments they prove that anaphylactic shock can be produced in the white rat, after both active and passive sensitization. The typical picture of shock does not, however, resemble that in the guinea-pig, though it resembles in some respects that in the dog. Both histamine and anaphylactic shock they believe result in two separate effects in all animals. The first is due to contraction of smooth muscle; the second to the increase in capillary permeability. The symptoms of shock vary as one or the other of these two effects predominates.

[S. W.]

The Lack of Identity Between the Viruses of Herpes and Encephalitis Lethargica

Parker, F., Jr. *(Journal of Medical Research,* March, 1924), summarizes the work done on experimental encephalitis, and believes that there is no conclusive evidence of the identity of herpes and encephalitis viruses, while the absence of the inclusion bodies characteristic of herpes in all human cases of encephalitis examined is good evidence for the existence of a distinct encephalitis virus. He further suggests that the brain lesions may be due to a toxin produced by an etiological agent growing elsewhere but without local symptoms.

[S. W.]

Cutaneous Hypersensitiveness to Tuberculin in Guinea-Pigs

Lange, L. L. *(Journal of Medical Research,* March, 1924), finds that guinea-pigs sensitized by introperitoneal injections of filtered extracts of tuberculous foci give a more violent reaction than the controls when tested intracutaneously with water extract of tubercle bacilli.

[S. W.]

A Streptothrix Organism from a Brain Abscess

Steele, A. E. *(Journal of Medical Research,* March, 1924). The streptothrix recovered from this case of brain abscess both at operation and post-mortem was grown in pure culture and produced striking lesions in the rabbit. There are a number of excellent illustrations.

[S. W.]

The Effects Produced by Injection of B. Histolyticus

Beckwith, T. D., and Mackillop, G. *(Journal of Medical Research,* March, 1924). Injection of B. histolyticus intramuscularly into the guinea-pig produces necrosis and liquefaction in liver, spleen, kidney, suprarenal, lung and heart muscle.

[S. W.]

Quantitative Peculiarities of Mixtures of the Virus and Immune Serum of Rocky Mountain Spotted Fever

Connor, C. L. *(Journal of Medical Research,* March, 1924), has found in mixtures of the virus and immune serum of Rocky Mountain spotted fever a zone phenomenon suggestive of that so familiar in antigen-antibody reactions.

[S. W.]

Studies on Rickettsia-Like Micro-Organisms in Insects

Hertig, M., and Wolbach, S. B. *(Journal of Medical Research,* March, 1924), present an elaborate study of the minute intracellular micro-organisms associated with arthropods. The wide range of material studied, the clear presentation and excellent plates make this monograph of great value to students of the subject. The authors believe that the term "Rickettsia" should not be so loosely applied as at present, but be restricted to minute, pleomorphic, intracellular organisms of proved pathogenicity with slight affinity for aniline dyes.

[S. W.]

A Fatal Infection with an Organism of the Proteus Group

Warren, S., and Lamb, M. E. *(Journal of Medical Research,* March, 1924). As is usual in the rare fatal infections with proteus organisms, this patient had had his resistance lowered by myelogenous leukemia and tuberculosis, with severe Vincent's Angina superimposed. The organism was recovered from the blood before and after death. At autopsy the liver was most heavily damaged, being peppered with abscesses. Similar lesions were produced by the organism in rabbits and guinea-pigs. Filtrates of broth cultures were found to be toxic.

[S. W.]

Kurloff Bodies in Guinea-Pigs

Bender, L. A. *(Journal of Medical Research,* June, 1924), noted a relationship between increase of eosinophils and presence of Kurloff bodies in the cytoplasm of some of the mononuclear leucocytes. Various methods of demonstrating the bodies are given, which are illustrated by excellent colored figures. No definite conclusions as to the nature of the Kurloff bodies are drawn.

[S. W.]

Congenital Cystic Omenta, Kidneys, and Livers in Identical Guinea-Pig Twins

Meyer, A. W. *(Journal of Medical Research,* June, 1924), presents a case of congenital cysts in guinea-pig twins, with numerous illustrations of the gross and microscopic pathology. He feels that presence of these cysts in presumably monozygotic twins gives much support to the theory that these cysts are germinal in origin. The presence of the omental cysts is the most valuable evidence for this view, as the normal omentum contains none of the epithelial elements requisite for the formation of these cysts.

[S. W.]

Report of a Case of Malignant Endothelioma with Necropsy

Foot, N. C. *(Journal of Medical Research,* June, 1924). After a brief summary of our present concepts of endotheliomata, Foot presents a case which he diagnoses as malignant endothelioma, probably primary in the reticulo-endothelium of the lymph nodes of the right groin, though the endothelium of the capillaries in the bone marrow of the left wrist cannot be ruled out. The purpose of the article is to arouse interest in this little-known type of tumor. It affords an excellent example of thorough histological investigation.

[S. W.]

OBSERVATIONS ON THE INFLUENCE OF THE X-RAY UPON EXPERIMENTAL SYPHILIS IN THE RABBIT

GRAHAM, W. C., BALDWIN, W. M., and GRIGG, W. K. (*Journal of Medical Research*, June, 1924). This is a brief report of the introductory work in a series of experiments on the influence of x-ray energy on the course of experimental syphilis in the rabbit. They believe that with proper precautions the Wassermann reaction may be of use in following the spirochetal activity in infected rabbits. Repeated exposures to x-ray during the incubation period retarded the development of syphilitic lesions and correspondingly the complement-binding power of the serum.

[S. W.]

DIABETES

JOHN (*Jour. Metabolic Research*, 4:1, July-August, 1923, p. 121) found no effect from insulin on blood sugar in vitro. His reports on patients contain some statements worth citing. A man, aged 32, showed on admission 12 per cent. sugar in the urine and 0.70 in the blood. The latter fell with insulin to 0.05; nothing was done for the symptoms; the blood sugar remained at this low level for almost two hours, when the patient ate dinner and immediately felt quite normal. Another man, aged 22, had his blood sugar reduced from 0.49 to normal in seven hours by 50 units.

[H. G.]

BLOOD CALCIUM

MARK in Allen's clinic reported (*Jour. Metabolic Research*, 4:1, July-August, 1923, p. 135) hypocalcemia in three cases of chronic kidney disorders. In three cases of arthritis deformans he found figures above 18 mg./100 c.c., higher than any in the literature (normal 10-12 mg.); a calcium-poor diet in one case reduced the blood-calcium but not to normal; had the disease been thus treated earlier he thinks that more benefit might have been achieved.

[H. G.]

ODD FAT AND ACIDOSIS

LUNDIN (*Jour. Metabolic Research*, 4:1, July-August, 1923, p. 151) induced ketosis in a normal by a diet of C 20—P 100—F 177, with a resulting urine acetone of 3.3 g./24 h. Replacement of the natural fat by odd carbon atom fat for a four-day period depressed the acetone to 1.5 g.; return to the first diet increased it to 4.7 g. Stool studies showed in the second period large lumps of fat, and an absorption of 80-85 per cent.; during the control periods I and III the absorption of natural fat amounted to about 95 per cent.

[H. G.]

ODD FAT (INTARVIN)

MODERN (*Jour. Metabolic Research*, 4:1, July-August, 1923, p. 177) also emphasizes the disagreeable, even nauseating character of this substance, and frequent vomiting. Patient 54 excreted as much as 25 per cent. unutilized. "Odd fat creates essentially the same insulin requirement as natural fat. Apparently, therefore, it is not directly converted to any large extent into carbohydrate . . . and is of no possible value in practical diabetic treatment." From a theoretical viewpoint he regarded it as a valuable contribution.

[H. G.]

ACIDOSIS IN THE YOUNG

ALLEN (*Jour. Metabolic Research*, 4:1, July-August, 1923, p. 199) found that puppies when starved for a few days develop acetone and die, while the fat and protein in the body should seem to preclude death from simple starvation. Since children are supposed to be more susceptible to acidosis than adults, it is conceivable that a normal infant suddenly exposed to complete fasting might develop a condition similar to a puppy.

[H. G.]

EFFECT OF POPULAR GYNECOLOGICAL PROCEDURES ON THE FUTURE CHILD-BEARING OF WOMEN

POLAK, J. O. (*Canad. M. A. J.*, 14:797, September, 1924), summarizes as follows:

First: That too many women are operated upon—many needlessly.

Second: That sterility operations give poor results and often have unfortunate sequels.

Third: That the gynecological patient seldom has a complete diagnosis before operation is advised.

Fourth: That, when possible, operations in the child-bearing woman should be deferred until she is finished having children; that in the interim better obstetrics, more attention to postpartum care, and the judicious use of pessaries will keep these women comfortable.

Fifth: That every abdominal operation has its morbidity and is followed by some intrapelvic pathology and a small mortality.

Sixth: That greater care as to indications should be used before determining on Caesarean section; and

Finally: That the gynecologist or surgeon should have an obstetrical training before doing surgical operations on the child-bearing woman.

[A. W. C.]

ONYCHAUXIS IN A EUNUCHOID

LISSER, H. (*Arch. of Derm. and Syph.*, 10:180, August, 1924), reports a case of this severe condition in a eunuchoid, which becomes normal after the implantation of testicular substance. No other local or general treatment was given.

[A. W. C.]

STUDIES ON THE COMPLEX NITRITOID CRISIS AFTER THE INTRAVENOUS ADMINISTRATION OF ARSENICALS

ROSEN, I., MULLER, E. F., and MYERS, C. N. (*Arch. of Derm. and Syph.*, 10:316, September, 1924), summarize as follows: Every intravenous injection of arsphenamin is followed by a slight decrease of leukocytes in the peripheric vessels of the entire body. It is known that this decrease is influenced by stimulation of the autonomic nervous system and its parasympathetic part. Thus every injection of arsphenamin has a direct influence on the autonomic nervous system. It is, however, not certain whether the therapeutic effect is dependent on or in any way influenced by this phenomenon. The angioneurotic symptoms sometimes observed after injections of arsphenamin become objectively manifest by a marked decrease of leukocytes in the peripheric vessels. The observation that epinephrin given previous to injections of arsphenamin prevents the decrease of leukocytes, confirms the well-known clinical observation that previous injections of epinephrin will prevent or diminish the angioneurotic syndrome. It is further proof that these reactions following every injection of arsphenamin are due to a disturbance of the autonomic nervous system, which may be demonstrated by measurable changes in the blood. It has not yet been definitely determined whether the hypersensitiveness of autonomic nervous system described above is due to a constitutional factor or whether it is to be regarded as a result of the detrimental effect of the syphilitic infection on the autonomic nervous system.

[A. W. C.]

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THE BOSTON MEDICAL LIBRARY

From time to time reference to the Boston Medical Library and its needs have appeared in our columns. It may not be generally appreciated that we have one of the best medical libraries in the world. This fact was brought to our attention in reading the official bulletin of The Royal Society of Medicine which held its annual meeting in London last July. In referring to the Library of the Royal Society of Medicine, the President, Sir William Hale-White, said that it is the largest, best equipped and the most useful medical library in the British Empire. It now has over 120,000 books. This Society is the amalgamation of some sixteen others and notwithstanding the long medical history of Great Britain this largest medical library of this great nation is exceeded in number of volumes by our Boston Medical Library which has over 130,000 volumes.

It may be that the work done by the far-sighted and public spirited men who laid the foundation of this important factor in medical education in Boston is inadequately appreciated by the present generation. It is certainly true that the medical profession has not been impelled to give full measure of support to this institution, partly, no doubt, because of lack of understanding of its needs.

The Library has grown far beyond its accommodations and should be substantially enlarged. It is seriously handicapped because of its inability to properly arrange the books and periodicals on hand.

The next great task to be undertaken by the medical profession of this community should be the raising of sufficient funds to build ample accommodations and create an endowment for this Library.

This fact should be kept in mind and physicians who are in a position to influence the appropriation of money for worthy objects should place the needs of the Library before public spirited persons.

The Library should be more than a custodian of medical literature. It should be the center of medical activities, and at the service of all reputable medical societies.

CHILD NUTRITION

Surgeon Taliaferro Clark, of the United States Public Health Service, has recently published in the Public Health Report of the service of August 29, 1924, a concise and well considered plea for more attention to the nutrition of the school child.

Recently so much has been published in the various scientific and health service journals and by numerous health organizations concerning child nutrition from both its scientific and sociologic aspects that it is at some risk of boring the reader or even perhaps causing a revulsion of feeling that the subject is brought up again. Often too closely repeated reiterations serve only to dull the point of our argument.

Nevertheless it must be recognized that this wakening interest in the nutrition of the child points directly to one of the fundamental principles on which the oncoming era of preventive medicine is to rest. Sooner or later we will all be drawn into this type of service, and it will be well for us to appreciate the foundation on which it is constructed.

Dr. Clark's thesis is based on a practical application of the principles of nutrition that have been shown to be correct. The estimate of nutrition used is that stated by Sir George Newman, British Ministry of Health, which concedes that there is no single gauge of nutrition; the terms of height and weight alone, as so frequently employed, are not sufficient. Sir George Newman's statement follows:

"In endeavoring to estimate a child's nutrition or its opposite (viz. malnutrition), we must think not only of bulk and weight of body, but of ratio of status to weight; of the general balance and substance of the body and of its carriage and bearing; of the firmness of the tissues; of the presence of subcutaneous fat; of the condition and process of the development of the muscular system; of the nervous and muscular system, as expressed in listlessness or alertness, in apathy or keenness; of the condition of the various systems of the body; and, speaking generally, of the relative balance and coördination of the functions of digestion, absorption, and assimilation of food, as well as of the excretion of waste products."

Such factors are considered as sleep, exercise, the correction of physical defects, food habits, sufficiency and proper selection of food. The special nutritive values of different food elements are taken up more in detail, and as is always necessary in this day and generation the vitamins are included, and the minerals. The proper selection of school lunches enters into the discussion.

"In many respects," the author continues, "the importance of efforts to maintain the nutrition of the child as an individual is overshadowed by the larger aspect of the effect of these efforts on future generations. Unless in addition to improving the stamina of the child, they succeed in bringing about an understanding and appreciation by him of the far-reaching effects of these measures on future generations, the full fruits of such endeavors will not be realized."

Special classes for malnourished children, he believes, should be unnecessary in a well conducted school system providing proper health supervision. Instruction in nutrition should not be reserved and given only to a special group of children, but should include all the children attending school.

In line with the same subject might be mentioned a pamphlet recently issued by the American Red Cross containing information for its chapters and branches on the organization of a nutrition service. Such a program as outlined includes prenatal work, preschool work and school work, nutrition classes for mothers, and courses in food selection. The duties of a part or full time nutrition worker are also discussed.

It is of great interest as well as a lesson to us to note the number of organizations that are devoting all or part ~~of their~~ activities to child hygiene. One of the pioneers in this field has been the Community Health Association of Boston which has conducted such a work for thirty-eight years and now, through lack of funds, has been compelled to drop it. More honor to the Health Department of the city which has been so ready to take over and continue the activities.

NEW LIGHT ON RICKETS THERAPY

A STUDY of the prevention and cure of rickets cannot fail to raise considerable speculation in the minds of the scientifically inquisitive as to the means by which such apparently unrelated agencies as ultraviolet radiation and the antirachitic fats can produce results so similar.

It is now common knowledge that exposure of the body surface to ultraviolet radiation, either from the direct rays of the sun or from the quartz lamp, exerts a marked beneficial effect on the symptoms of acute rickets and infantile tetany, causes a rise in the lowered blood calcium and phosphorus to normal levels, and brings about deposition of calcium in the epiphyses of the bones. The same results are achieved by the ingestion of codliver oil and egg yolk, although more slowly.

Kugelmass, I. Newton and McQuarrie, I., of the Department of Pediatrics of Yale University, have reported in *Science*, September 9, 1924, their attempts to trace a relationship between these very dissimilar agencies. Substances curative and non-curative of rickets were tested for their emission of ultraviolet light with ultraviolet sensitive photographic plates exposed to each substance for twenty-four hours, developed with pictol, fixed, washed and dried. Exposures were made through quartz plate screens, through glass screens and directly. Three series of experiments were carried out on each substance. First the substances were made alkaline with 10 per cent potassium hydroxide and this mixture was oxidized by bubbling pure oxygen through it. Next the substances were untreated. Lastly they were reduced by ammonium ferro-tartrate.

The substances curative of rickets (codliver oil, egg yolk, bile, hydroquinone and sperm oil) affected the plate through quartz and unscreened in all except the reduction test. The plate was unaffected through the glass screen. The substances non-curative of rickets (linseed oil, peanut oil, cotton seed oil, lard, the saponifiable fraction of codliver oil, and also crude oil, albolene and glycerine) did not affect the plate through either quartz or glass. All oxidized substances examined affected the plates exposed to them unscreened.

Since oxidation resulted in the production of ultraviolet rays, an attempt was made to determine the reversibility of this reaction. The substances curative of rickets which were oxidized in alkaline media were placed in a quartz test tube and radiated by ultraviolet light for three hours. A continuous formation of oxygen bubbles was noted.

The experiments would seem to indicate that substances curative of rickets emit ultraviolet radiation when oxidized. These substances when oxidized release their oxygen on exposure to ultraviolet radiation. A method of measuring the therapeutic potency of these substances is suggested.

Alfred F. Hess at the meeting of the American Pediatric Society on June 7 reported success in irradiating non-antirachitic substances such as cotton seed oil and linseed oil and rendering them antirachitic for the rat. Steenboch in *Science*, September 5, reported similar results.

THE MEETING OF THE COUNCIL

The autumn meeting of the Council of the Massachusetts Medical Society was held October first in the Medical Library.

After calling the meeting to order the resignation of Dr. Richard B. Butler of Fall River was presented and accepted.

The President then delivered an address as follows:

INTRODUCTORY REMARKS BY THE PRESIDENT

We have recently had New England Week, the purpose being to unify the New England spirit, its resources and energy, to guard the old foundations, and for a forward movement to larger and better things.

New England medicine is coming to its own. Testimony from without is not wanting as to the preëminence of our physicians in the country today. An eminent internist, connected with the Cornell Medical School, says that Boston gives promise of being the medical center of the country in the future.

I consider the influence of the Boston Medical and Surgical Journal the dominant factor in this achievement. The active support of the Journal of our Society, by our members, will hasten the happy day of our assuming that commanding position in the country.

We are concerned in many questions of public policy. For example:

How are our disabled soldiers cared for six years after the war?

In a neighboring State, an ex-airman, who developed pulmonary tuberculosis in the service, was ordered this spring across the State for reexamination. He had been under Dr. Brown's care at Saranac. He was fighting for his life, for his wife and two little children; the weather was bad, he asked permission to wait the coming of the examiner to his city; this request was refused. Dr. Brown's report on the serious condition of his lungs was ignored. He went to the distant city. The examiner could not be found; later, he made a second trip; the examiner said: "There is nothing the matter with you." This is discreditable to our profession and to the Government.

I ask again for subscriptions for the History of the Society, that a financial burden may be lifted from our Secretary and that the honor of the Society be maintained.

The Committee on State and National Legislation has been untiring in its work. The Secretary will report to you today.

I find in our Legislature evidence of the ancient prejudice against physicians.

Dr. Reginald H. Fitz stated the case in his annual oration, many years ago. He said: "The medical profession in this State has lost its influence with the Legislature for the reason that it always advocates some selfish proposition." "When physicians appear before a committee the members say: 'What axe have these fellows to grind now?' "

In a Western State, recently, a campaign to furnish free medical service to crippled children was instituted by a private organization of business men. Legislative action was sought for the performance of this relief work. At the hearing strong opposition was made by the organized medical profession. After the hearing the chairman of the committee said to the spokesman for the physicians: "Go home and forget it, and I will forget it. If the public in this State knew of your opposition to the proposed service to crippled children you would be unqualifiedly condemned and your future influence would be gone."

In Massachusetts, physicians have it in their power to remove any prejudice remaining against them on Beacon Hill.

Every new phase of professional work suffers from lack of standards. These standards must necessarily be worked out in practice. This is exemplified at this time by the dissatisfaction with the work of the public health nurse. Criticism of this work is heard as freely within the nursing profession as without. This criticism is largely due to a lack of commonly accepted standards of service and fields of activity. Since the demands on the nurse in city and country obviously vary, is not the logical solution to be found in district conferences between representatives of local medical and nursing organizations in order to outline a program based on their peculiar local needs?

We have recently lost by death an honored member of our Council, Dr. John Duff, of Charlestown. We cherish his memory, for his great heart, his unselfish devotion to duty, his high character and professional attainments.

In this connection the time has come, in my opinion, when the Council should consider the fuure needs of the State Society in Boston.

Do we not need an adequate home in this city for the Society, where its hospitality may be dispensed and the activities of its committees promoted? Attention to this phase of our need has been voiced by members in the past. Our committees, notably that on National and State Legislation and on Public Health, are hampered by a lack of secretarial service and office room.

The Committee on Legislation for the past four years has had as its secretaries men devoted to the service of the Society at serious encroachment on their private practice. We cannot always command such service.

This holds good in a degree with the other committees. If Boston is to take its proper place as a medical center a home for our four thousand members is necessary to express the ideals, suitably to house the Fellows and to prevent overlapping in the work of the departments.

The needs of our JOURNAL for more room and closer affiliation with the work of the Society are evident to all.

I would suggest that a committee of this Council be chosen to consider this matter and report at a later meeting of the Council.

The Nominating Committee was asked to retire and select a candidate for the office of Vice President which was vacant because the election last June was found to be irregular. On the return of the committee, Dr. Ralph W. Jackson's name was presented and he was promptly elected. This confirmed the wisdom of the choice last June and corrected a pardonable mistake.

The Committee of Arrangements, by Dr. O'Hara, Chairman, recommended holding the next annual meeting in Boston on June 9th and 10th, 1925. The recommendation was adopted.

Dr. Osgood reported for the Committee on Scientific Papers a proposed plan which would provide for more papers of general interest and fewer devoted to special subjects in order that there may be more general association of the members. This plan has been informally discussed and seems to be very generally endorsed.

The Committee on Membership and Finance made the usual reports as to membership and the recommendations were adopted, also the recommendation that the annual dues be eight dollars for the ensuing year.

Dr. Painter reported his failure in trying to investigate the Middlesex College of Medicine and Surgery and the College of Physicians and Surgeons of Boston. The latter never even answered his letter. The Middlesex College, however, wrote several which are clumsy attempts at diplomacy and contained bitter accusations of the attitude and motives of the Society.

The report was accepted as a report of progress, but if one may judge from the facial expression of the Chairman of the Committee, he is not hopeful of making further progress.

Since this School is neither willing to exhibit its facilities nor meet a duly accredited committee, it may be assumed in all fairness that members of the faculty who are also members of this Society are open to suspicion of being associated with a school unwilling to have its methods and standing observed by physicians competent to pass judgment.

In order to coöperate with representatives of a society with a view to have a bust of Dr. Oliver Wendell Holmes placed in the Hall of Fame, the President was authorized to appoint a committee.

The President was also authorized to appoint a committee which will consider providing for permanent quarters for the Society.

Dr. T. J. O'Brien, Secretary of the Committee on Legislation, reported the activities of the Committee since the last meeting. The especial problem was that involved in dealing with the chiropractic bill, so-called. Dr. O'Brien's account of the activities of the Committee showed that a very great amount of work had been put into this matter and an unusual coöperation by members of the Society was shown. The endorsement of the proposition that Massachusetts should have one standard for all practitioners of medicine was very general, as shown by letters which Dr. O'Brien had received from prominent educators, life insurance companies, Chambers of Commerce and private citizens.

Dr. O'Brien said that the interest shown and coöperation given by doctors was greater from men living outside of the Suffolk District than from our Boston members. This indicates that if the contest is transferred to the Legislature as a whole, we will have to depend on the districts outside of Suffolk for the most effective opposition to sponsors of the Chiropractic Bill.

The report of Dr. Stetson of the House of Delegates of the A. M. A. was a clear exposition of the important feature of the meeting.

Dr. Mongan, also a delegate, endorsed the report and said that medical men must be alive to some of the great questions of the day affecting our economic status and our relation to patients.

The report will be published later and should receive careful attention.

Dr. R. B. Osgood explained the circumstances referred to in a report of one of the committee relative to advertising. It was shown that the doctor in question was a victim of circumstances rather than a violator of ethics.

Dr. Cody, after failing to get desired information as to the work of the Board of Estimation or Evaluation, moved that a committee be appointed to report on this matter. This committee will be named by the President.

The meeting then adjourned.

This outline of some matters considered is only intended to promote interest which will prompt our members to read the Secretary's record of the Proceedings with care.

HEARING ON DR. PAINTER'S BILL—HOUSE 1209

LAST winter a Mr. Toomey, a member of the Legislature, introduced a bill, House 62, which would, if enacted, have made the law governing the registration of physicians much better, for it had as one feature a provision giving to the Board of Registration power to reject applicants who had graduated from a medical school below the requirements which might be adopted by the Board. It was felt by the Committee on Medical Education and Medical Diplomas, of which Dr. Charles F. Painter is Chairman, that this move by a layman was encouraging and relieved the Committee of the responsibility of initiating any other bill.

Dr. Painter wrote to the petitioner, offering coöperation. For some unexplained reason the bill was withdrawn. Dr. Painter's Committee then prepared and had introduced a bill which, in addition to other features, was designed to give the Governor more freedom in selecting members of the Board of Registration.

At a hearing before the Committee on Public Health the Board of Registration objected to this bill, evidently feeling that it reflected on the members.

At the hearing October first, after explaining the purpose which his Committee had in mind, Dr. Painter secured the support of Dr. Prior in recommending removal of the restrictive feature of the present law which prevents the Governors from appointing more than three members representing any one medical society, and giving the Board more power. Questions by the members of the Committee indicated interest in a law similar to that in force in New York State, which gives to a Board of Regents control of the educational requirements of applicants. This method did not appear objectionable to Dr. Prior, who represented the Board of Registration.

The present indication, if one may judge from the questions propounded by the Committee, is the probability of some constructive legislation.

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CORRESPONDENCE

DR. WILLIAM ALLEN PUSEY ON MEDICAL EDUCATION AND COMMENTS ON HIS RECENT ADDRESS

September 19, 1924.

Boston Medical and Surgical Journal,
Boston, Mass.

To the Editor:

Dr. Olin West has just called my attention to your editorial comment in the Journal of August 28, on the fact that the Middlesex Students Magazine has published my address on medical education and seems to get a good deal of comfort out of it. I thank you for the generous tone of the comment and for the invitation to reply which seems to be carried in your statement that "Those who know Dr. Pusey will wait for his own statement before believing that he is taking sides with the Middlesex."

If the Middlesex can get out of my address any comfort for second rate schools, it will have to read this comfort into it. Rather than having any sympathy for such schools I have a long-standing antipathy for them; and rather than having a feeling that the wiping out of them is a "medical catastrophe," not to say "crime," my firm opinion is that it is a public service of high order. I admire greatly the work which the Council on Medical Education has done in weeding out unfit medical schools. In this work the Council has performed with admirable courage a large and difficult task. It is the great service that the Council has done and one for which I, like every other well-wisher for the good of medicine in this country, must feel under obligations to it.

The points upon which I disagree with the Council are the length of the medical course and the substance and methods of it. It is a misrepresentation of my address to claim that I am working for lower standards of quality in medical education. Such misrepresentations have occurred in adverse criticisms upon my address within our own ranks. It is not surprising, therefore, that misrepresentations of my attitude might be made by those who want to use them for their own purposes. As a matter of fact, there is nowhere in my address any statement that could be interpreted as favoring lowering our standards of quality of medical education, unless reducing the length of the course is in itself reduction in standards of quality of education. I stated for example: "In this proposition I am making no plea for the poor or the cheap medical school. The essential of a sound education of this sort, or of any sort, is a sound institution conducting it. I would make the requirements on medical schools as exacting as necessary to hold them to high standards of scholarship." I said further: "Nor am I offering this sort of medical education as a makeshift to meet a situation. I offer it as one that would be adequate, sound pedagogically — probably sounder than our present course — and in line with other technical educations. The essential things in it are: First, that the collegiate part of the course should be educationally sound; and second, that it should include a clinical training through a hospital apprenticeship." I emphasized repeatedly in the address the necessity that our education should be sound, using "sound" in one of its accepted senses, which I should say means, as respects education, that it should be sincere, intelligent, enlightened in its aims and methods, and adequate for its purpose.

I did advocate a reduction in time of the minimum requirements to practise to approximately four years. That is picked out at once as advocating lower standards of medical education, as though it necessarily meant lower standards in general. Lower standards in time, yes, but lower standards in quality, no! I would call attention to the fact that time of production is not the essence of quality. The essence of quality lies in sincerity, purpose, intelligence, knowledge of the particular thing and excellence in it, whether this last is acquired or inherited. It is confusion of the issue to insist that reduction in time of production of anything, including physicians, is necessarily reduction in standards of its quality. A year or two with a Sydenham, or a Virchow, or a Pasteur, or a Lister, might give a better education in the true sense than a lifetime with mediocrity. Now, lest someone should torture this statement into meaning that under my plan medical students must needs be taught by geniuses, let me hasten to add that this is simply given as an illustration to emphasize the point that education is a matter of quality of instruction and not altogether duration of it. The point I am trying to make is that it is not a valid answer to my proposition for a sound four years' medical course to urge in opposition that this necessarily means a lowering of standards of scholarship and training. To insist upon this to the exclusion of all genuine consideration of the subject is to refuse to answer, and carries the inference that the answer is very difficult to give. It may be true that the essentials of a sound medical education cannot be given in four yars. If that can be established I shall not advocate a four years' course. But I believe it is not true and I have tried to indicate briefly my reasons for this view in my address.

The reason I believe that the collegiate part of medical education could be very materially shortened and not only not suffer, but perhaps be improved, is that I believe that medical teaching is pedagogically unsound, overloaded with detail, and unnecessarily wasteful of the students' time in its methods; that it needs to be recast in the light of experience of teaching methods and principles which have been established by the test of long experience in education in general. But this is another story, and rather a long one, which I cannot burden you with now.

Wm. Allen Pusey.

MISCELLANY

MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

DISEASES REPORTED FOR THE WEEK ENDING SEPTEMBER 27, 1924

Disease	*No. of Cases*
Anterior poliomyelitis	13
Chickenpox	24
Diphtheria	86
Dog-bite requiring anti-rabic treatment	3
Epidemic cerebrospinal meningitis	3
German measles	3
Gonorrhea	98
Influenza	4
Measles	33
Mumps	22
Ophthalmia neonatorum	21
Pneumonia, lobar	29
Scarlet fever	107
Septic sore throat	1
Syphilis	55
Suppurative conjunctivitis	9
Trachoma	2
Tuberculosis, pulmonary	102
Tuberculosis, other forms	8
Typhoid fever	14
Whooping cough	29

RHODE ISLAND STATE BOARD OF HEALTH

CONTAGIOUS DISEASES REPORTED FOR THE WEEK ENDING SEPTEMBER 13, 1924

Diphtheria

Providence	5
East Providence	1
Cumberland	2

Scarlet Fever

Providence	1

Mumps

Providence	1

Poliomyelitis

Cranston	2

Pneumonia

Cranston	1
Providence	1

Typhoid Fever

Woonsocket	2
East Providence	1

CONTAGIOUS DISEASES REPORTED FOR THE WEEK ENDING SEPTEMBER 20, 1924

Diphtheria

Providence	5
Pawtucket	3
Newport	7

Scarlet Fever

Pawtucket	2
Cumberland	1
East Providence	1

Poliomyelitis

Pawtucket	1
Providence	1

Typhoid Fever

Providence	3
Newport	1
East Providence	1

Whooping Cough

Providence	2

Cerebrospinal Meningitis

Westerly	1

Ophthalmia Neonatorum

Providence	1

CONNECTICUT DEPARTMENT OF HEALTH

WEEKLY MORBIDITY REPORT FOR THE WEEK ENDING SEPTEMBER 27, 1924

(Including all cases reported before 11 A. M., Monday, September 29, 1924)

Diphtheria

Fairfield County	
Bridgeport	4
Danbury (C)	1
Darien	1
Greenwich	1
Stamford (C)	1
Stamford (T)	5
Stratford	4
Hartford County	
Bristol	5
Hartford	1
New Britain	4
Windsor	1
Middlesex County	
Middletown (T)	1
New Haven County	
Meriden (C)	2
Seymour	1
Wallingford (B)	2
Waterbury	2
Tolland County	
Tolland	4
Windham County	
Plainfield	1
State total	41
Last week	24

The following diphtheria bacilli carriers were reported:

Greenwich	1
Hartford	1
Lebanon	2
New Haven	5
New London	4
Stamford (C)	2

Scarlet Fever

Fairfield County	
Bridgeport	2
Shelton	1
Stamford (C)	1
Hartford County	
New Britain	1
Litchfield County	
Barkhamsted	1
Thomaston	2
Middlesex County	
Middletown (T)	1
New Haven County	
Hamden	2
New Haven	4
Orange	1
Waterbury	3
New London County	
Norwich (C)	3
Windham County	
Windham	1
Woodstock	1
State total	24
Last week	29

Typhoid Fever

Fairfield County	
Bridgeport	1
Norwalk	2
Stamford (T)	2
Hartford County	
Hartford	2
Wethersfield	1
Middlesex County	
Saybrook	1
New Haven County	
New Haven	1
State total	10
Last week	12

Measles

Hartford County	
Hartford	1
New Haven County	
New Haven	5
State total	6
Last week	7

Whooping Cough

Fairfield County	
Bridgeport	1
Fairfield	1
Greenwich	1
Hartford County	
Hartford	7
Southington	5
Middlesex County	
Westbrook	4
New Haven County	
Cheshire	1
Hamden	2
Meriden (C)	3
New Haven	2
Waterbury	1
Tolland County	
Rockville	1
Somers	1
Windham County	
Willimantic	2
State total	32
Last week	62

Other Communicable Diseases

Chickenpox	1
Dysentery (bac.)	1
German measles	1
Influenza	3
Malaria	1
Mumps	4
Ophthalmia neo.	1
Pneumonia (lobar)	8
Poliomyelitis	5
Tetanus	1
Tuberculosis (pul.)	34
" (other forms)	2
Gonorrhoea	26
Syphilis	12

THE ANNUAL MEETING OF THE NEW ENGLAND SURGICAL SOCIETY

THE meeting this year was held in Hartford, Conn., September 26 and 27.

The exercises began in the St. Francis Hospital at 9 A. M., Friday, and after witnessing the work done in the operating room and inspection of the hospital, the members were entertained by a review of some features of the excellent work done in this hospital.

Some of the important exhibitions were a specimen of carcinoma of the pylorus found after an operation for ulcer thirteen years before, x-rays of fractured and misplaced vertebrae with an unusual degree of functional recovery; an ingenious apparatus for the treatment of fractures of the leg and ankle; a full term extra uterine foetus found in the abdomen of a woman who made a good recovery; a successful result after two operations for imperforate anus;

a large, densely calcified uterine myoma, a well-nourished woman who had been relieved of an extensive carcinoma of the uterine cervix three years ago with no recurrence to date; a man who had an extensive fracture of the left side of the skull operated on for immediate relief and later to relieve a burrowing abscess in the neck, who was actively delirious for sixty days and spent seventy-seven days in the hospital, but who now appears well; a youth who had been ill for six months, having had six operations, including resections of the bowel, in dealing with a fistula in the small intestine near the stomach, and obstructions after general peritonitis; an excision of half of the stomach for carcinoma with relief for nearly a year; a spinal tumor (metastasis from cancer of breast) studied by means of injection of air into the spinal canal; an infant cured by operation for pyloric stenosis; a good result following cleft palate operation and an interesting mastoid case with subsequent complications requiring excision of the jugular vein and drainage of the sinus.

This hospital with its nearly five hundred beds is very well arranged and equipped for the economical and efficient care of patients.

After the hospital exercises the members were entertained at luncheon in the Hunt Memorial, which is a well arranged commodious building donated to the Hartford Medical Society. After the luncheon the scientific papers were read and the subjects discussed.

On invitation of Mr. Heublein an excursion to Montevideo, the summer residence of the host, followed the scientific section. This is located on a ridge of land about six miles from Hartford, reached by a beautiful forest road. As one climbs the last ascent the visitor is confronted by a stone and cement building of magnificent proportions with a tall tower. From this elevation of twelve hundred feet overlooking broad valleys one can see many villages, the city of Hartford, and on a clear day even Springfield, Mass. The grounds are attractively laid out. The wants of the inner man were lavishly supplied.

Even after this royal entertainment the Society was again indebted to Mr. Heublein for a bountiful dinner served in the Hotel Heublein, the host sitting at the head table with the President and guests. Aside from his natural cordiality and desire to minister to the welfare of his friends, this unusual hospitality may have been enhanced by the fact that Mr. Heublein's son is a physician occupying a prominent position in the profession in Hartford.

Mr. Heublein must have been pleased in noting the enjoyment and appreciation of his guests.

After the dinner President F. B. Lund read a paper dealing with the life of Hippocrates. The recital of the important events and features of the life of this illustrious physician together with the personal reactions of the reader gave evidence of most profound study of the subject.

Although numerous references to the work of Hippocrates are in medical literature the treatment of the theme by Dr. Lund is most complete and makes a classical contribution to the history of the man. Dr. Lund's scholarship in Greek literature is in evidence in the address, which we hope to publish later.

In order to give the surgeons the opportunity "to see oursel's as others see us," the President introduced Dr. W. H. Robey as his first after-dinner speaker, thereby departing from the established custom. After alluding to the characteristic handwriting and his promptness in writing opinions of cases, Dr. Lund referred to his physical distinction in being the tallest and straightest doctor in Boston. Reference was made to the distinguished service rendered by Colonel Robey in the late war and the great influence exercised as Secretary of the Staff of the Boston City Hospital, which made it fitting to say that Dr. Robey is the City Hospital.

In answer to the cordial introduction, Dr. Robey referred to the relations of surgeons and physicians and expressed his gratification in being able at this time to reverse the usual situation and look down upon the surgeons.

He drew inferences from his army service and made several pointed allusions to the quality of surgeons, quoting one army officer who, after an exasperating experience, wanted to know if there were any surgeons in that particular place who could make a diagnosis.

He gave several witty references to the relationship of doctors and surgeons which were especially interesting to those who are or have been connected with the City Hospital.

His experience led him to observe that conditions have changed since the war, for surgeons are trying more frequently to make a diagnosis before making an incision, and at the present time some physicians are able to convince surgeons of the cause of a given illness, and both physicians and surgeons are now agreed, more than ever, that a correct diagnosis is the most important feature of professional work.

His illustrations of the habit of some doctors of making diagnoses by observation of external evidence or behavior, rather than by thorough examination, were pointed.

He declared himself cordially in favor of raising the standards of medical education because of the evidence of inferior training as seen in the medical men from some sections who, although entered as surgeons, were unable to qualify.

Referring to the criticism of the day relative to the preponderance of research men, he was sure that only about one per cent. of the graduates of medical schools were engaged in research, the rest being practitioners. He believed that all should have the best possible education to start with and add to it through study and practice. He felt that there is a misconception of the meaning of research which does not necessarily apply to microscopic study or the use of intricate laboratory equipment, and cited the case of Sir James Mackenzie, who was one of the best research men. Several features of medical teaching were elaborated.

He declared his belief in the necessity of more publicity in order to give to the people more understanding of diseases and the appropriate treatments. One important feature of public instruction relates to the circulatory diseases as shown by statistics, for in Massachusetts the total number of deaths from all causes in the first six months of 1924 was 26,470. Of the more important cases heart disease led with 3,543, pneumonia 2,772, cancer 2,511 and tuberculosis 1,942.

In Boston a study of the statistics for three years is as follows:

	1923	1922	1921
Heart disease	1,876	1,765	1,462
Nephritis	646	646	543
Cerebral hemorrhage	705	644	636
Arteriosclerosis	403	498	489
Cancer (all sites)	1,151	1,123	1,056
Diarrhea and enteritis	148	216	207
Diabetes mellitus	187	222	149
Accidental and violent deaths	798	797	669
Alcoholism	169	117	70
Broncho-pneumonia	67	601	426

Taken as a whole, it was a most remarkable after-dinner speech, combining wisdom with trenchant wit.

The second speaker, Mr. Wise, of Hartford, in a very entertaining way told many stories bringing out various phases of life.

On Saturday morning the members met at the Hartford Hospital, which is a modern hospital with 619 beds. Operations were in progress in several operating rooms. The dry clinic was begun at 10:30 and the following subjects and exhibitions were presented:

Remarks on Horace Wells and his relation to the discovery of anaesthesia.

Two cases of carcinoma of the rectum with special reference to the possibilities in conservative treatment.

Epithelioma of the lip.

Multiple perforations of the intestine with resection.

Transfusion for acetanilid poisoning.

Report of eight cases of tetanus treated at the Hartford Hospital in the last two years.

Blood sedimentation as an aid in diagnosis.

Epithelioma of the tongue, well five years after operation.

Intraabdominal carcinoma in the same patient, occurring at wide intervals of time.

Report of twenty-nine cases of congenital hypertrophic pyloric stenosis operated upon at the Hartford Hospital.

Pyelograms: 1. Hypernephroma. 2. Fused Kidney.

Exophthalmic goitre in a man sixty-three years of age with extreme exophthalmos.

Exophthalmic goitre.

Diverticulitis of the sigmoid.

Carcinoma of the sigmoid.

Report of cases of cholecystitis.

Benign and malignant tumors of the bladder.

A case demonstrating the advantages of the Levin tube in the treatment of vomiting, accompanying peritonitis.

Synovectomy.

Demonstration of the results of the use of radium: 1. Squamous cell cancer of the throat. 2. Lantern slides. Epithelioma of lower lip. Angioma of cheek and ear.

Report of cases of caudal parasacral and paravertebral anaesthesia on the general surgical service for the months of June and July.

Extensive varicosities both extra and intra-abdominally.

Torsion and strangulation of tube.

Demonstration of X-ray plates of special interest.

Retroperitoneal perforation of second portion of duodenum.

Tuberculous stenosis of small intestine for which eight intestinal anastomosis have been done.

Three cases of carcinoma of the stomach.

Luncheon was served in the Hospital, after which the Society met at the Hunt Memorial to hear the scientific papers.

At the executive session the following named officers were elected:

President—Dr. John W. Keefe, Providence, R. I.

Vice-President—Dr. Alfred M. Rowley, Hartford, Conn.

Secretary—Dr. Ernest Wells of Hartford, Conn.

Treasurer—Dr. P. P. Johnson, Beverly, Mass. (re-elected).

Recorder—Dr. Walter G. Phippen, Salem, Mass. (re-elected).

The present Secretary, Dr. P. E. Truesdale, of Fall River, who declined re-election, was given a vote of thanks for his services as Secretary of the Society from its formation eight years ago.

An amendment to the Constitution was adopted, increasing the number of active members of the Society from 100 to 110.

The following twelve new members were elected:

Dr. Fritz C. Hyde, Greenwich, Conn.
Dr. H. G. Jarvis, Hartford, Conn.
Dr. Henry G. Hutchins, Boston, Mass.
Dr. P. H. Leavitt, Brockton, Mass.

Dr. George A. Leland, Jr., Boston, Mass.
Dr. Thomas M. Luce, Portsmouth, N. H.
Dr. E. J. Mahoney, Springfield, Mass.
Dr. Arthur W. Marsh, Worcester, Mass.
Dr. Ira Hart Noyes, Providence, R. I.
Dr. Ralph B. Ober, Springfield, Mass.
Dr. Allen G. Rice, Springfield, Mass.
Dr. Royal B. Watkins, Worcester, Mass.

The following doctors were elected honorary members:

Dr. Hardy Phippen, Salem, Mass.
Dr. J. Bapst Blake, Boston, Mass.
Dr. Wm. E. Faulkner, Keene, N. H.
Dr. James J. Goodwin, Clinton, Mass.

It was voted to hold the next annual meeting in Springfield.

The meeting was valuable because of the scientific demonstrations and especially enjoyable as a social occasion.

NEWS ITEMS

MEETING OF THE AMERICAN CHILD HEALTH ASSOCIATION

Professor C. E. Turner of the Department of Biology and Public Health, Massachusetts Institute of Technology, and Dr. Richard M. Smith, assistant professor of Child Hygiene, Harvard School of Public Health, Cambridge, Mass., representing Massachusetts, will speak at the Second Annual Meeting of the American Child Health Association to be held October 14-16 in Kansas City, Mo. Prof. Turner will summarize the findings at the first day's meeting on the discussion of "Training Leaders for Child Health Work" and he will also give a report of the 1924 Health Education Conference held at Massachusetts Institute of Technology in June.

Dr. Smith will address a joint meeting of the American Child Health Association and the Kansas City Clinical Society on "Tuberculosis in Infants and Young Children." Dr. Smith is a member of the executive committee of the American Child Health Association.

Dr. Edwin H. Brigham, for so many years assistant librarian of the Boston Medical Library observed the eighty-fourth anniversary of his birth at his home in Brookline on Saturday, September 27. His son and daughter and many friends dropped in on him during the day with their felicitations.

Announcement.—Dr. Nathaniel Allison, Dr. Frank R. Ober, Dr. Albert H. Brewster, Dr. Ralph K. Ghormley wish to announce that beginning October first, 1924, they will continue the practice of the late Dr. Robert W. Lovett in Orthopedic Surgery at 234 Marlborough St., Boston.

Harvard Medical School Appointments.—At a meeting of the Board of Overseers held on September 23, 1924, the appointment of Nathaniel Allison, M. D., Professor of Orthopaedic Surgery, to serve from September 1, 1924, was consented to, also the appointment of David Harold Walker, Walter Augustus Lecompte Professor of Otology, to serve from September 1, 1924.

Dr. Clara Loitman of Boston has completed her appointments in the Massachusetts Homeopathic Hospital and Boston Floating Hospital and, beginning October 1st, will interne in the Willard Parker Hospital in New York.

New England Society of Psychiatry.—On Wednesday, September 24th, the regular fall meeting of the New England Society of Psychiatry was held at the United States Veterans' Bureau Hospital, No. 95, at Northampton, Mass., with Dr. Appleton H. Pierce, Medical Officer in Charge, as host. There was a large attendance of members, and an interesting program was presented. Before luncheon was served and at the close of the business meeting members were taken in groups by the resident staff through the various departments and wards of the institution.

THE WACHUSETT MEDICAL IMPROVEMENT SOCIETY

At the last meeting of the Wachusett Medical Improvement Society, held at Holden Hospital, September 17, the following officers were elected:

President: Dr. F. H. Washburn.
Vice President: Dr. E. B. Emerson.
Secretary: Dr. O. D. Phelps.
Treasurer: Dr. Mark Joress.

Action was taken in regard to the single standard for practitioners of medicine and the vote was unanimous in favor of single standard.

The next meeting will be held October 8 at 7:30 P. M. at Holden Hospital. Program has been arranged by Dr. Elisha S. Lewis. The paper of the evening will be given by Dr. E. H. Trowbridge of the Worcester Board of Health; subject: "Some Public Health Problems."

O. Draper Phelps, *Secretary*.

HARVARD NAMES BOARD MEMBERS

Under the above caption the daily newspapers have made public members of the Administrative Boards of the University.

According to this statement in the *Herald* the officials of the medical departments are as follows:

Medical School: President Lowell, ex-officio; Dean David L. Edsall (ex-officio), chairman; Dr. Algernon Coolidge, Dr. Harvey Cushing, Dr.

Reid Hunt, Dr. John L. Bremer, Dr. Walter B. Cannon, Dr. Charles M. Campbell, Dr. Worth Hale, Dr. Simeon B. Wolbach, Dr. Hans Zinsser, Dr. Kenneth D. Blackfan, Dr. Francis W. Peabody.

School of Public Health: President Lowell, ex-officio; Dr. David L. Edsall (ex-officio), chairman; Dr. Milton J. Rosenau, Dr. Edwin B. Wilson, Dr. Hans Zinsser, Dr. Cecil K. Drinker.

Cancer Commission of Harvard University: Dr. Robert B. Greenough, director; Dr. Channing C. Simmons, secretary; Charles Jackson, treasurer; Dr. James H. Wright, pathologist in charge of free diagnosis; Dr. William Daune, research fellow in physics; Dr. Henry Lyman, research fellow in chemistry; Charles E. Barr, research fellow in bio-physics; Emory Leon Chaffee, research fellow in bio-physics; Walter S. Hughes, assistant in bio-physics; Dr. William L. McNamara, assistant in pathology.

Collis P. Huntington Memorial Hospital: Dr. Robert B. Greenough, surgeon in charge; Dr. Channing C. Simmons, surgeon; Dr. George G. Smith, surgeon; Dr. George A. Leland, Jr., surgeon; Dr. Henry A. Christian, consulting physician; Dr. George R. Minot, physician and chief of medical laboratory; Dr. Thomas E. Buckman, assistant physician; Dr. Raphael Isaacs, assistant physician; Dr. Ernest M. Daland, surgeon to out-patients; Dr. Leland S. McKittrick, surgeon to out-patients; Dr. Daniel C. Greene, laryngologist; Dr. Edward Woodbridge Herman, assistant laryngologist; Dr. Lawrie B. Morrison, consulting roentgenologist; Dr. Merrill C. Sosman, consulting roentgenologist; Dr. Robert G. Vance, Jr., roentgenologist; Dr. Arthur M. Greenwood, dermatologist.

A report is current that Dr. Joshua Clapp Hubbard will be Professor of Clinical Surgery at the Harvard Medical School, to occupy the chair vacated by Dr. Frank H. Lahey.

No message from the Medical School has been received confirming these statements, but it is assumed that they are correct.

ETHER DAY

Dr. Hans Zinsser will deliver the address at the Massachusetts General Hospital, Oct. 16, at the meeting in celebration of Ether Day.

ENROLLMENT OF MEDICAL STUDENTS

The Class A Medical Schools in Boston report the enrollment of students for this year as follows:

Boston University of Medicine: Freshmen 62, Advanced Standing 149, total 211.

Harvard Medical School: Freshmen 125, Sophomores 120, Juniors 131, Seniors 125, Total 501.

Tufts College Medical School: Freshmen 140, Sophomores 126, Juniors 109, Seniors 103, total 478.

REMOVALS

Dr. C. R. Alden, who has a residence in Newton Center (Middlesex South), has moved his office from 238 Newbury St. to 270 Commonwealth Ave., Boston.

Dr. Robert D. Curtis has changed his office from 355 Marlboro St. to 66 Commonwealth Ave., Boston.

Dr. John G. Breslin has moved his office from 514 Commonwealth Ave. to 76 Bay State Road, Boston.

Dr. Clarence A. Bonney has been made chief executive officer at the Psychopathic Hospital, 74 Fenwood road, Roxbury. He has been transferred from the Middlesex South to the Norfolk District.

Dr. William E. Ladd and **Dr. George D. Cutler** announce the removal of their offices to 66 Commonwealth Ave., Boston.

Dr. Augustus Thorndike, Jr. announces the opening of his office at 66 Commonwealth Ave., Boston.

Dr. Howard K. Thompson has moved from The Massachusetts Homeopathic Hospital to 589 Beacon St., Boston.

Dr. Albert Evans announces the removal of his office to 416 Marlboro St., Boston.

Dr. Herbert E. Maynard has moved his office from 178 to 464 Commonwealth Ave.

RECENT DEATHS

Dr. Sophia Reed Peabody, formerly a practicing physician in Boston, died suddenly on Tuesday afternoon, Sept. 23, 1924, at her home at 80 Market street, Rockland, where she had lived for the past twelve years. Death was from heart disease.

Sophia Reed Peabody was born in Worcester fifty-three years ago and was the daughter of Edward and Sophia (Reed) Peabody. Her parents moved to Lowell, where she received much of her education, continuing it in Boston and at the Tufts Medical School, from which she was graduated with the class of 1897. She then took up the practice of her chosen profession in Boston, and practised also in Lowell. She relinquished this work ten or twelve years ago, in order to assume the medical oversight and care of aged relatives in her home in Rockland.

She was head of the literary department of women's clubs in Rockland, Abington and Hanover and was especially well informed in literary matters and history. She made a special study of current events, one of the topics which she regularly brought before the members of her various clubs.

Dr. Peabody as a member also of the Women's City Club and the Unity Club in Boston. Her nearest survivor is a sister, Mrs. Helen Kambour of Barrington, R. I.

Dr. Herman Weston Marshall died at the Boston City Hospital. Oct. 3, 1924.

Early on the morning of September 30 he was picked up in the middle of the street, unconscious and with fractured skull and jaw. As no one was found who witnessed the accident, the police have not been able to run down the motorist. The fact that the physician's pockets were turned inside out has led the police to consider the theory that he was robbed and thrown from a car.

Dr. Marshall was 49 years old and his home was at 11 Claflin road, Brookline. He was graduated from Johns Hopkins Medical School in 1904, and during the following year served on the house staff of the Johns Hopkins Hospital. Leaving there in 1905 he studied at the Massachusetts General Hospital for two years.

In 1907 he established an office in Boston and soon afterwards began specializing in orthopedic surgery.

He was a member of the American Medical Association, the Massachusetts Medical Society and the Boston Orthopedic Club. His widow survives him.

Dr. Edward Rowland Cutler, a prominent practitioner of Waltham and former Fellow of the Massachusetts Medical Society, died at the home of his daughter in Newton Highlands, September 24, 1924, at the age of 84. He was born in Boston, Jan. 15, 1840, and after two years of study at Williams College entered the Harvard Medical School in 1860. He received the degree of M. D. in 1863. On the day of his graduation he walked directly from the Medical School to the State House, where he enlisted in the Medical Corps, and was commissioned as assistant surgeon in the United States Army. He rendered distinguished service on the field of battle with the First Massachusetts Heavy Artillery first as assistant surgeon, to which he was appointed Sept. 25, 1863, and surgeon, Dec. 5, 1864.

During the years of 1865 and 1866 he engaged in the practice of medicine at Hartford, Conn. The three years between 1866 and 1869 he spent in study abroad, returning from Vienna in 1870 to engage in the practice of medicine at Waltham. He retired from active practice in 1906.

Dr. Cutler was visiting physician to the Waltham Hospital and was connected with the Waltham Training School for Nurses for many years. His wife, who was Miss Melvina Amanda Rogers of South Sudbury, died three years ago. Three sons and a daughter survive him.

Dr. Mardis Edward Gleason died at his home in Newton, September 28, 1924, at the age of 65. He was born in East Warren, Vt., Jan. 25, 1859, attended the academy at Montpelier, and was graduated from the medical school of the University of Vermont in 1884. For two years after his graduation he served on the staff of the Mary Fletcher Hospital at Burlinghton.

Following his work as an interne he studied at the Post Graduate School of New York and the Harvard Medical School. He practiced in Winchendon before coming to Newton in 1900. He was a former president of the Newton Medical Society, and was a member of the Hunnewell Club of Newton.

His widow, who was Miss Josephine Stone of New York, survives him, as do two sons.

He was a Fellow of the Massachusetts Medical Society.

Word has been received of the death in Syracuse, N. Y., of Dr. John L. Heffron, dean emeritus of Syracuse University College of Medicine, aged 73. Dr. Heffron was run down by an automobile, receiving a fractured skull and a broken leg.

He was a graduate of Syracuse University College of Medicine in 1881, later serving the college as dean from 1907 to 1922. He made a specialty of internal medicine. His daughter married Dr. Warren R. Sisson of Boston.

Dr. Mary Edna Mosher died at the Massachusetts Homeopathic Hospital, Boston, September 28, 1924. She was a graduate of Boston University Medical School in the class of 1887, practised medicine in the Klondike and later lectured about her experiences there. She was a member of the Massachusetts Homeopathic Medical Society and the American Institute of Homeopathy, also the Professional Women's Club, being its historian at the time of her death. She is survived by three sisters.

NOTICES

Attention has been called to erroneous statements made by a person who has solicited subscriptions to this **Journal**. We have not learned the name of this person. If any one is asked to subscribe to this JOURNAL other than by a properly accredited person we would like to know the name and address of this solicitor.

SUFFOLK DISTRICT MEDICAL SOCIETY

THE schedule of the meetings of the Suffolk District Medical Society, Middlesex South District Medical Society and the Boston Medical Library to be held during 1924-1925 at the Boston Medical Library, 8 The Fenway, Boston, at 8:15 o'clock, will be on the dates specified.

October 29—Stated Meeting. "The Nullity of Psychoanalysis as a Scientific Concept," Dr. Joseph W. Courtney.

November 12—Surgical Section, in association with the Middlesex South District Medical Society. "The Treatment of Septicaemia by the Newer Methods," Dr. Edward B. Pieper, Philadelphia, Pa.

December 17—Medical Section, in association with the Middlesex South District Medical Society. "The Newer Drug Treatment of Heart Disease," Dr. Paul D. White.

January 28—General Meeting, in association with the Boston Medical Library and the Middlesex South District Medical Society. "Some Experiences of a Medic-legal Pathologist" (lantern slides), Dr. George B. Magrath.

February 25—Surgical Section, in association with the Middlesex South District Medical Society. "Pyelonephritis," Dr. Arthur H. Crosbie.

March 25—Medical Section, in association with the Middlesex South District Medical Society. "The Treatment of Pneumonia," Dr. Edwin A. Locke.

April 29—Annual Meeting. "Hypertension and Longevity," Dr. Harold M. Frost.

The medical profession are cordially invited to attend all these meetings.

C. MORTON SMITH, M. D., *President*,
Suffolk District Medical Society.
LESLEY H. SPOONER, M. D., *Secretary*,
Suffolk District Medical Society.
EUGENE A. DARLING, M. D., *President*,
Middlesex South District Medical Society.
JOHN H. TAYLOR, M. D., *Secretary*,
Middlesex South District Medical Society.
MALCOLM STORER, M. D.,
Boston Medical Library.
HENRY T. HUTCHINS, M. D., *Chairman*,
Surgical Section,
Suffolk District Medical Society.
ROGER I. LEE, M. D., *Chairman*,
Medical Section,
Suffolk District Medical Society.

THE CUTTER LECTURE ON PREVENTIVE MEDICINE

DR. THORVALD MADSEN, director of the Danish Serotherapeutic Institute, Copenhagen, will deliver a lecture on Whooping Cough: Its Bacteriology, Diagnosis, Prevention and Treatment, Tuesday, October 14, 1924, at the Harvard Medical School, Amphitheatre Building E, at 5 P. M.

These lectures are given annually under the terms of a bequest from John Clarence Cutter, whose will provided that the lectures so given should be styled the Cutter Lectures on Preventive Medicine and that they should be delivered in Boston and be free to the medical profession and the press.

The medical profession, medical and public health students, the press and others interested are cordially invited to attend.

SOCIETY MEETINGS

Bristol South Medical Society

Next meeting will be held Thursday, November 16, 1924.

Essex North District Medical Society

January 7, 1925. Semi-annual meeting at Haverhill.
May 6, 1925. Annual meeting at Lawrence.

Hampden District Medical Society

Meetings to be held on the third Tuesday of January and the third Tuesday in April.

Dr. William J. Mayo is expected to attend the combined meeting of the four western Districts to be held in Springfield in October.

Hampshire District Medical Society

The meetings will be held the second Wednesday of November, January, March and May.

Dr. Channing Simmons will deliver an address at the November meeting. Title: "The Treatment of Cancer, with Especial Reference to Radiation."

Middlesex East District Medical Society

Wednesday, November 19. Harvard Club. Dr. George K. Pratt, "Community Aspects of Psychiatry."

Wednesday, January 21. Harvard Club. Dr. Franklin K. White, "Diagnosis of Gall-Bladder Disease."

Wednesday, March 18. Harvard Club. Dr. John H. Cunningham, "Urinary Retention: Its Significance and Treatment."

Wednesday, April 15. Harvard Club.

Wednesday, May 13. Colonial Inn, North Reading.

Middlesex North District Medical Society

January 28, 1925.
April 29, 1925.

Norfolk District Medical Society

October 28, 1924. Boston Tuberculosis Hospital, Mattapan. Subject: Tuberculosis. Speakers: The Superintendent and Drs. Kelley and Remick.

November 25, 1924. Masonic Temple, Roxbury. Subject: Diabetes—with especial reference to insulin. Speakers: Dr. Joslin and probably one other.

January 27, 1925. Masonic Temple. Subject: "Some Trends of Medical Teaching and Medical Practice." Speakers: Drs. A. S. Begg and W. P. Bowers.

February 24, 1925. Masonic Temple. Subject: "The Need of Periodical Physical Examinations and How to Make Them." Speaker: Dr. Francis H. McCrudden. A second speaker will be selected to present another subject at this meeting.

March 31, 1925. Tufts College Medical School. This meeting given over to Drs. Leary and Watters for the purpose of giving us a medical examiners' talk.

Norfolk South District Medical Society

Meetings will be held the first Thursday of each month from October to May, inclusive, at 12 noon, at the Norfolk County Hospital, South Braintree.

Dr. T. O'Donnell, District Health Officer, will read a paper at the meeting to be held October 2.

Worcester District Medical Society

November 12, 1924. Grafton State Hospital. Dr. Charles Macfie Campbell of the Psychopathic Hospital, Boston, will speak on "Nervous Disorders in Children."

December 10, 1924. Worcester State Hospital. Subject and speaker to be announced.

January 7, 1925. Surgical meeting. Place, subject and speaker to be announced.

February 11, 1925. Memorial Hospital, Worcester. Papers will be read by the members of the hospital staff.

March 11, 1925. St. Vincent's Hospital, Worcester. Papers will be read by the members of the hospital staff.

April 9, 1925. Subject and speaker to be announced.

May 14, 1925. Annual meeting.